



San Joaquin Valley

AIR POLLUTION CONTROL DISTRICT



APR 09 2013

Gerardo C. Rios, Chief
Permits Office
Air Division
U.S. EPA - Region IX
75 Hawthorne St
San Francisco, CA 94105

**Re: Final - Authority to Construct / Certificate of Conformity (Minor Mod)
Project # S-1130262**

Dear Mr. Rios:

The Air Pollution Control Officer has issued Authorities to Construct (S-1547-1182-1 through '-1200-1) with Certificates of Conformity to Aera Energy, LLC. This project authorized emissions allowances and provisions for certain defined activities that are required as part of the steam generators' "initial commissioning period."

Enclosed are copies of the Authorities to Construct. The application and proposal were sent to US EPA Region IX on March 15, 2013. No comments were received following the District's preliminary decision on this project.

Thank you for your cooperation in this matter. If you have any questions, please contact Mr. Leonard Scandura, Permit Services Manager, at (661) 392-5500.

Sincerely,

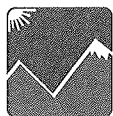
David Warner
Director of Permit Services

Enclosures
sdd

Northern Region
4800 Enterprise Way
Modesto, CA 95356-8718
Tel: (209) 557-6400 FAX: (209) 557-6475

Central Region (Main Office)
1990 E. Gettysburg Avenue
Fresno, CA 93726-0244
Tel: (559) 230-6000 FAX: (559) 230-6061

Southern Region
34946 Flyover Court
Bakersfield, CA 93308-9725
Tel: 661-392-5500 FAX: 661-392-5585



San Joaquin Valley

AIR POLLUTION CONTROL DISTRICT



APR 09 2013

Mr. Brent Winn
Aera Energy, LLC
PO Box 11164
Bakersfield, CA 93389-1164

**Re: Final - Authority to Construct / Certificate of Conformity (Minor Mod)
Project # S-1130262**

Dear Mr. Winn:

The Air Pollution Control Officer has issued Authorities to Construct (S-1547-1182-1 through -1200-1) with Certificates of Conformity to Aera Energy, LLC. This project authorized emissions allowances and provisions for certain defined activities that are required as part of the steam generators' "initial commissioning period."

Enclosed are the Authorities to Construct and invoice. The application and proposal were sent to US EPA Region IX on March 15, 2013. No comments were received following the District's preliminary decision on this project.

Prior to operating with modifications authorized by the Authority to Construct, you must submit an application to modify the Title V permit as an administrative amendment in accordance with District Rule 2520, Section 11.5.

Thank you for your cooperation in this matter. If you have any questions, please contact Mr. Leonard Scandura, Permit Services Manager, at (661) 392-5500.

Sincerely,

David Warner
Director of Permit Services

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Tel: 661-392-5500 FAX: 661-392-5585



AUTHORITY TO CONSTRUCT

PERMIT NO: S-1547-1182-1

ISSUANCE DATE: 03/29/2013

LEGAL OWNER OR OPERATOR: AERA ENERGY LLC
MAILING ADDRESS: PO BOX 11164
BAKERSFIELD, CA 93389-1164

LOCATION: HEAVY OIL WESTERN STATIONARY SOURCE
KERN COUNTY, CA

EQUIPMENT DESCRIPTION:

MODIFICATION OF 85 MMBTU/HR NATURAL GAS-FIRED STEAM GENERATOR WITH NATIONWIDE BOILER MODEL CATASTAK SELECTIVE CATALYTIC REDUCTION SYSTEM (5 PPMV NOX) OR EQUIVALENT, APPROVED TO OPERATE AT VARIOUS SPECIFIED LOCATIONS: REISSUE S-1547-1182-0 WITH AUTHORIZATION FOR INITIAL COMMISSIONING AND REFRACTORY CURING PERIODS

CONDITIONS

1. This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. This unit is approved for operation at the following locations: SE/4 of Section 33 and SE/4 of Section 34, T28S, R21E, and SW/4 of Section 2 and NE/4, NW/4, SW/4 & SE/4 of Section 3, T29S, R21E. [District Rule 4102]
4. Permittee shall notify the District Compliance Division of each location at which the unit is located in excess of 24 hours. Such notification shall be made no later than 48 hours after starting operation at the location. [District Rule 1070] Federally Enforceable Through Title V Permit
5. This unit shall be equipped with a convection section with at least 235 square feet of heat transfer surface area per MMBtu/hr of maximum rated heat input (verified by manufacturer). [Public Resources Code 21000-21177, CEQA]
6. This unit shall be equipped with variable frequency drive high efficiency electrical motors driving the blower and water pump. [Public Resources Code 21000-21177, CEQA]

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (661) 392-5500 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT. This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Seyed Sadredin, Executive Director / APCO

7. Particulate matter emissions shall not exceed 0.1 grain/dscf at operating conditions, nor 0.1 grain/dscf calculated to 12% CO₂, nor 10 lb/hr. [District Rules 4201, 4301, 5.1 and 5.2.3] Federally Enforceable Through Title V Permit
8. The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap, roof overhang, or any other obstruction. [District Rule 4102]
9. The unit shall only be fired on natural gas with sulfur content not to exceed 0.75 gr-S/100 scf. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
10. Emission rates, except during startup, shutdown, initial commissioning and refractory curing, shall not exceed any of the following limits: NO_x: 5 ppmvd @ 3% O₂ or 0.0061 lb-NO_x/MMBtu; PM₁₀: 0.0076 lb-PM₁₀/MMBtu; CO: 25 ppmvd @ 3% O₂ or 0.0185 lb-CO/MMBtu or VOC: 0.003 lb-VOC/MMBtu. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
11. Emission rates during startup, shutdown and refractory curing shall not exceed: particulate matter - 10 pounds per hour, or 0.1 grains/dscf calculated to 12% CO₂; sulfur - 200 pounds of SO₂ per hour, or 2000 ppmv as SO₂, or 0.11 pounds sulfur (as S) per MMBtu on average-wide basis for all units in Rule 4406 plan; NO₂ - 140 pounds per hour or 0.14 pounds per MMBtu. [District Rules 4101, 4102, 4301, 4405, 4406 and 4801] Federally Enforceable Through Title V Permit
12. Any of units S-1547-1182 through '-1200 may be installed provided that permitted annual emissions do not exceed any of the following limits: NO_x: 49,990 lb/yr; SO_x: 17,210 lb/yr; PM₁₀: 62,282 lb/yr; CO: 151,608 lb/yr or VOC: 24,585 lb/yr, consistent with the quantity of ERCs identified in this project. [District Rules 2201 and 4102] Federally Enforceable Through Title V Permit
13. The initial commissioning period is the time required to complete the necessary safety checks, curing of refractory material and the performance tuning of the burner and attendant systems to achieve compliance with the emission limits required by this permit. The commissioning period begins upon first firing of the unit and shall not extend beyond the first 135 hours of actual burner operation. [District Rule 2201] Federally Enforceable Through Title V Permit
14. The refractory curing period is the time required to gradually increase the firing rate and internal temperature of a unit to thermally temper and set the optimal properties of new refractory material that has been installed as part of a unit's initial commissioning or has been replaced as part of a subsequent maintenance or repair procedure. The refractory curing period following the replacement of material as part of a maintenance or repair procedure shall not exceed 30 hours total of actual burner operation per occurrence. [District Rule 2201] Federally Enforceable Through Title V Permit
15. During the initial commissioning period and any refractory curing period, operator shall limit emissions to the extent possible by optimizing the performance of the low NO_x burner and flue gas recirculation system as can be accommodated by individual initial commissioning and refractory curing activities, by following good work practices and fuel conserving measures and by completing all work in an expeditious manner. Operator shall keep a record of the specific activities undertaken as part of the initial commissioning period and all refractory curing periods and the duration of each activity and shall make the records available for District inspection upon request. [District Rule 2201] Federally Enforceable Through Title V Permit
16. Annual quantity of natural gas fuel burned in this steam generator shall not exceed 745,000 MMBtu/year. [District Rule 2201] Federally Enforceable Through Title V Permit
17. Duration of start-up and shutdown shall not exceed 2 hours each per occurrence. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
18. Duration of refractory curing shall not exceed 30 hours per each occurrence. Permittee shall keep accurate records of refractory curing duration and make records readily available to the District upon request. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
19. Permittee shall maintain records of duration of each start-up and shutdown, and refractory curing, for a period of five years and make such records readily available for District inspection upon request. [District Rule 4320] Federally Enforceable Through Title V Permit
20. A source test to demonstrate compliance with NO_x and CO emission limits shall be performed within 60 days of startup of this unit. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

21. Source testing to measure natural gas-combustion NO_x and CO emissions from this unit shall be conducted at least once every twelve (12) months (no more than 30 days before or after the required annual source test date). After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months (no more than 30 days before or after the required 36-month source test date). If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
22. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit
23. For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit the test cannot be used to demonstrate compliance with an applicable limit. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
24. The following test methods shall be used: NO_x (ppmv) - EPA Method 7E or ARB Method 100, NO_x (lb/MMBtu) - EPA Method 19; CO (ppmv) - EPA Method 10 or ARB Method 100; Stack gas oxygen (O₂) - EPA Method 3 or 3A or ARB Method 100; stack gas velocities - EPA Method 2; Stack gas moisture content - EPA Method 4; SO_x - EPA Method 6C or 8 or ARB Method 100; fuel gas sulfur as H₂S content - EPA Method 11 or 15; and fuel hhv (MMBtu) - ASTM D 1826 or D 1945 in conjunction with ASTM D 3588. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
25. The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
26. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit
27. The permittee shall monitor and record the stack concentration of NO_x, CO, and O₂ at least once every month (in which a source test is not performed) using a portable analyzer that meets District specifications. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the unit unless monitoring has been performed within the last month. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
28. The permittee shall monitor and record the stack concentration of NH₃ at least once during each month in which a source test is not performed. NH₃ monitoring shall be conducted utilizing District approved gas-detection tubes or a District approved equivalent method. Monitoring shall not be required if the unit is not in operation; i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within one day of restarting the unit unless monitoring has been performed within the last month. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
29. If the NO_x or CO concentrations corrected to 3%, as measured by the portable analyzer, or the NH₃ concentrations corrected to 3% O₂, as measured by District approved gas-detection tubes, exceed the allowable emissions limit, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rules 4102, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

30. All NO_x, CO, O₂ and NH₃ emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. The NO_x, CO, and O₂ analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. NH₃ emission readings shall be measured in accordance with the gas sample tube manufacturer's specifications and recommendations. Portable analyzer emission readings taken shall be averaged over a 15 consecutive-minute sample period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive minute period. [District Rules 4102, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
31. The permittee shall maintain records of: (1) the date and time of NO_x, CO, O₂ and NH₃ measurements, (2) the O₂ concentration in percent by volume and the measured NO_x, CO and NH₃ concentrations corrected to 3% O₂, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, (5) method of determining the NH₃ concentration, and (6) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
32. Ammonia emissions readings shall be conducted at the time the NO_x, CO and O₂ readings are taken. The readings shall be converted to ppmvd @ 3% O₂. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
33. All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. Unless otherwise specified in the PTO, no determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0 of District Rule 4320. For the purposes of permittee-performed alternate monitoring, emissions measurements may be performed at any time after the unit reaches conditions representative of normal operation. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
34. Shorter time periods for demonstration of compliance after startup or re-ignition may be approved by the APCO by submittal of appropriate technical justification upon implementation of this ATC. [District Rule 2201] Federally Enforceable Through Title V Permit
35. PUC quality natural gas is any gaseous fuel where the sulfur content is no more than one-fourth (0.25) grain of hydrogen sulfide per one hundred (100) standard cubic feet, no more than five (5) grains of total sulfur per one hundred (100) standard cubic feet, and at least 80% methane by volume. [District Rule 4320] Federally Enforceable Through Title V Permit
36. If the steam generator is not fired on PUC-regulated natural gas and compliance is achieved through fuel sulfur content limitations, then the sulfur content of the fuel shall be determined by testing sulfur content at a location after all fuel sources are combined prior to incineration, or by performing mass balance calculations based on monitoring the sulfur content and volume of each fuel source. The sulfur content of the fuel shall be determined using the test methods referenced in this permit. [District Rule 4320] Federally Enforceable Through Title V Permit
37. When complying with sulfur emission limits by fuel analysis or by a combination of source testing and fuel analysis, permittee shall demonstrate compliance at least annually. [District Rule 4320] Federally Enforceable Through Title V Permit
38. If the unit is fired on PUC-regulated natural gas, valid purchase contracts, supplier certifications, tariff sheets, or transportation contracts may be used to satisfy the fuel sulfur content analysis, provided they establish the fuel sulfur concentration and higher heating value. [District Rule 4320] Federally Enforceable Through Title V Permit
39. All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
40. Prior to operating under this Authority to Construct, permittee shall surrender emission reduction credits for the following quantities of emissions: NO_x: 1,136 lb/quarter; SO_x: 391 lb/quarter; PM₁₀: 1,416 lb/quarter and VOC: 559 lb/quarter. Offset shall be provided at the applicable offset ratio specified in Table 4-2 of Rule 2201 (as amended 9/21/2006). [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

41. ERC Certificate Numbers S-796-2, S-2958-2, S-2395-1, S-1337-5 and S-1032-5 (or certificates split from these certificates) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201] Federally Enforceable Through Title V Permit
42. The permittee shall obtain written District approval for the use of any equivalent SCR equipment not specifically approved by this ATC. Approval of the equivalent equipment shall be made in writing and only after the District's determination that the submitted design and performance of the proposed alternative equipment is equivalent to the authorized equipment. [District Rule 2010] Federally Enforceable Through Title V Permit
43. The permittee's request for approval of equivalent equipment shall include the make, model, manufacturer's maximum rating, manufacturer's guaranteed emissions rates, equipment drawing(s) and operational characteristics/parameters. [District Rule 2010] Federally Enforceable Through Title V Permit
44. ATC S-1547-1182-0 shall be canceled upon implementation of this ATC. [District Rule 2201] Federally Enforceable Through Title V Permit



AUTHORITY TO CONSTRUCT

PERMIT NO: S-1547-1183-1

ISSUANCE DATE: 03/29/2013

LEGAL OWNER OR OPERATOR: AERA ENERGY LLC
MAILING ADDRESS: PO BOX 11164
BAKERSFIELD, CA 93389-1164

LOCATION: HEAVY OIL WESTERN STATIONARY SOURCE
KERN COUNTY, CA

EQUIPMENT DESCRIPTION:

MODIFICATION OF 85 MMBTU/HR NATURAL GAS-FIRED STEAM GENERATOR WITH NATIONWIDE BOILER MODEL CATASTAK SELECTIVE CATALYTIC REDUCTION SYSTEM (5 PPMV NOX) OR EQUIVALENT, APPROVED TO OPERATE AT VARIOUS SPECIFIED LOCATIONS: REISSUE S-1547-1183-0 WITH AUTHORIZATION FOR INITIAL COMMISSIONING AND REFRACTORY CURING PERIODS

CONDITIONS

1. This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. This unit is approved for operation at the following locations: SE/4 of Section 33 and SE/4 of Section 34, T28S, R21E, and SW/4 of Section 2 and NE/4, NW/4, SW/4 & SE/4 of Section 3, T29S, R21E. [District Rule 4102]
4. Permittee shall notify the District Compliance Division of each location at which the unit is located in excess of 24 hours. Such notification shall be made no later than 48 hours after starting operation at the location. [District Rule 1070] Federally Enforceable Through Title V Permit
5. This unit shall be equipped with a convection section with at least 235 square feet of heat transfer surface area per MMBtu/hr of maximum rated heat input (verified by manufacturer). [Public Resources Code 21000-21177, CEQA]
6. This unit shall be equipped with variable frequency drive high efficiency electrical motors driving the blower and water pump. [Public Resources Code 21000-21177, CEQA]

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (661) 392-5500 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT. This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

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7. Particulate matter emissions shall not exceed 0.1 grain/dscf at operating conditions, nor 0.1 grain/dscf calculated to 12% CO₂, nor 10 lb/hr. [District Rules 4201, 4301, 5.1 and 5.2.3] Federally Enforceable Through Title V Permit
8. The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap, roof overhang, or any other obstruction. [District Rule 4102]
9. The unit shall only be fired on natural gas with sulfur content not to exceed 0.75 gr-S/100 scf. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
10. Emission rates, except during startup, shutdown, initial commissioning and refractory curing, shall not exceed any of the following limits: NO_x: 5 ppmvd @ 3% O₂ or 0.0061 lb-NO_x/MMBtu; PM₁₀: 0.0076 lb-PM₁₀/MMBtu; CO: 25 ppmvd @ 3% O₂ or 0.0185 lb-CO/MMBtu or VOC: 0.003 lb-VOC/MMBtu. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
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12. The initial commissioning period is the time required to complete the necessary safety checks, curing of refractory material and the performance tuning of the burner and attendant systems to achieve compliance with the emission limits required by this permit. The commissioning period begins upon first firing of the unit and shall not extend beyond the first 135 hours of actual burner operation. [District Rule 2201] Federally Enforceable Through Title V Permit
13. The refractory curing period is the time required to gradually increase the firing rate and internal temperature of a unit to thermally temper and set the optimal properties of new refractory material that has been installed as part of a unit's initial commissioning or has been replaced as part of a subsequent maintenance or repair procedure. The refractory curing period following the replacement of material as part of a maintenance or repair procedure shall not exceed 30 hours total of actual burner operation per occurrence. [District Rule 2201] Federally Enforceable Through Title V Permit
14. During the initial commissioning period and any refractory curing period, operator shall limit emissions to the extent possible by optimizing the performance of the low NO_x burner and flue gas recirculation system as can be accommodated by individual initial commissioning and refractory curing activities, by following good work practices and fuel conserving measures and by completing all work in an expeditious manner. Operator shall keep a record of the specific activities undertaken as part of the initial commissioning period and all refractory curing periods and the duration of each activity and shall make the records available for District inspection upon request. [District Rule 2201] Federally Enforceable Through Title V Permit
15. Any of units S-1547-1182 through -1200 may be installed provided that permitted annual emissions do not exceed any of the following limits: NO_x: 49,990 lb/yr; SO_x: 17,210 lb/yr; PM₁₀: 62,282 lb/yr; CO: 151,608 lb/yr or VOC: 24,585 lb/yr, consistent with the quantity of ERCs identified in this project. [District Rules 2201 and 4102] Federally Enforceable Through Title V Permit
16. Annual quantity of natural gas fuel burned in this steam generator shall not exceed 745,000 MMBtu/year. [District Rule 2201] Federally Enforceable Through Title V Permit
17. Duration of start-up and shutdown shall not exceed 2 hours each per occurrence. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
18. Duration of refractory curing shall not exceed 30 hours per each occurrence. Permittee shall keep accurate records of refractory curing duration and make records readily available to the District upon request. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
19. Permittee shall maintain records of duration of each start-up and shutdown, and refractory curing, for a period of five years and make such records readily available for District inspection upon request. [District Rule 4320] Federally Enforceable Through Title V Permit
20. A source test to demonstrate compliance with NO_x and CO emission limits shall be performed within 60 days of startup of this unit. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

21. Source testing to measure natural gas-combustion NO_x and CO emissions from this unit shall be conducted at least once every twelve (12) months (no more than 30 days before or after the required annual source test date). After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months (no more than 30 days before or after the required 36-month source test date). If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
22. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit
23. For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit the test cannot be used to demonstrate compliance with an applicable limit. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
24. The following test methods shall be used: NO_x (ppmv) - EPA Method 7E or ARB Method 100, NO_x (lb/MMBtu) - EPA Method 19; CO (ppmv) - EPA Method 10 or ARB Method 100; Stack gas oxygen (O₂) - EPA Method 3 or 3A or ARB Method 100; stack gas velocities - EPA Method 2; Stack gas moisture content - EPA Method 4; SO_x - EPA Method 6C or 8 or ARB Method 100; fuel gas sulfur as H₂S content - EPA Method 11 or 15; and fuel hhv (MMBtu) - ASTM D 1826 or D 1945 in conjunction with ASTM D 3588. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
25. The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
26. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit
27. The permittee shall monitor and record the stack concentration of NO_x, CO, and O₂ at least once every month (in which a source test is not performed) using a portable analyzer that meets District specifications. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the unit unless monitoring has been performed within the last month. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
28. The permittee shall monitor and record the stack concentration of NH₃ at least once during each month in which a source test is not performed. NH₃ monitoring shall be conducted utilizing District approved gas-detection tubes or a District approved equivalent method. Monitoring shall not be required if the unit is not in operation; i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within one day of restarting the unit unless monitoring has been performed within the last month. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
29. If the NO_x or CO concentrations corrected to 3%, as measured by the portable analyzer, or the NH₃ concentrations corrected to 3% O₂, as measured by District approved gas-detection tubes, exceed the allowable emissions limit, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rules 4102, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

30. All NO_x, CO, O₂ and NH₃ emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. The NO_x, CO, and O₂ analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. NH₃ emission readings shall be measured in accordance with the gas sample tube manufacturer's specifications and recommendations. Portable analyzer emission readings taken shall be averaged over a 15 consecutive-minute sample period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive minute period. [District Rules 4102, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
31. The permittee shall maintain records of: (1) the date and time of NO_x, CO, O₂ and NH₃ measurements, (2) the O₂ concentration in percent by volume and the measured NO_x, CO and NH₃ concentrations corrected to 3% O₂, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, (5) method of determining the NH₃ concentration, and (6) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
32. Ammonia emissions readings shall be conducted at the time the NO_x, CO and O₂ readings are taken. The readings shall be converted to ppmvd @ 3% O₂. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
33. All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. Unless otherwise specified in the PTO, no determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0 of District Rule 4320. For the purposes of permittee-performed alternate monitoring, emissions measurements may be performed at any time after the unit reaches conditions representative of normal operation. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
34. Shorter time periods for demonstration of compliance after startup or re-ignition may be approved by the APCO by submittal of appropriate technical justification upon implementation of this ATC. [District Rule 2201]
35. PUC quality natural gas is any gaseous fuel where the sulfur content is no more than one-fourth (0.25) grain of hydrogen sulfide per one hundred (100) standard cubic feet, no more than five (5) grains of total sulfur per one hundred (100) standard cubic feet, and at least 80% methane by volume. [District Rule 4320] Federally Enforceable Through Title V Permit
36. If the steam generator is not fired on PUC-regulated natural gas and compliance is achieved through fuel sulfur content limitations, then the sulfur content of the fuel shall be determined by testing sulfur content at a location after all fuel sources are combined prior to incineration, or by performing mass balance calculations based on monitoring the sulfur content and volume of each fuel source. The sulfur content of the fuel shall be determined using the test methods referenced in this permit. [District Rule 4320] Federally Enforceable Through Title V Permit
37. When complying with sulfur emission limits by fuel analysis or by a combination of source testing and fuel analysis, permittee shall demonstrate compliance at least annually. [District Rule 4320] Federally Enforceable Through Title V Permit
38. If the unit is fired on PUC-regulated natural gas, valid purchase contracts, supplier certifications, tariff sheets, or transportation contracts may be used to satisfy the fuel sulfur content analysis, provided they establish the fuel sulfur concentration and higher heating value. [District Rule 4320] Federally Enforceable Through Title V Permit
39. All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
40. Prior to operating under this Authority to Construct, permittee shall surrender emission reduction credits for the following quantities of emissions: NO_x: 1,136 lb/quarter; SO_x: 391 lb/quarter; PM₁₀: 1,416 lb/quarter and VOC: 559 lb/quarter. Offset shall be provided at the applicable offset ratio specified in Table 4-2 of Rule 2201 (as amended 9/21/2006). [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

41. ERC Certificate Numbers S-796-2, S-2958-2, S-2395-1, S-1337-5 and S-1032-5 (or certificates split from these certificates) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201] Federally Enforceable Through Title V Permit
42. The permittee shall obtain written District approval for the use of any equivalent SCR equipment not specifically approved by this ATC. Approval of the equivalent equipment shall be made in writing and only after the District's determination that the submitted design and performance of the proposed alternative equipment is equivalent to the authorized equipment. [District Rule 2010] Federally Enforceable Through Title V Permit
43. The permittee's request for approval of equivalent equipment shall include the make, model, manufacturer's maximum rating, manufacturer's guaranteed emissions rates, equipment drawing(s) and operational characteristics/parameters. [District Rule 2010] Federally Enforceable Through Title V Permit
44. ATC S-1547-1183-0 shall be canceled upon implementation of this ATC. [District Rule 2201] Federally Enforceable Through Title V Permit



AUTHORITY TO CONSTRUCT

PERMIT NO: S-1547-1184-1

ISSUANCE DATE: 03/29/2013

LEGAL OWNER OR OPERATOR: AERA ENERGY LLC
MAILING ADDRESS: PO BOX 11164
BAKERSFIELD, CA 93389-1164

LOCATION: HEAVY OIL WESTERN STATIONARY SOURCE
KERN COUNTY, CA

EQUIPMENT DESCRIPTION:

MODIFICATION OF 85 MMBTU/HR NATURAL GAS-FIRED STEAM GENERATOR WITH NATIONWIDE BOILER MODEL CATASTAK SELECTIVE CATALYTIC REDUCTION SYSTEM (5 PPMV NOX) OR EQUIVALENT, APPROVED TO OPERATE AT VARIOUS SPECIFIED LOCATIONS: REISSUE S-1547-1184-0 WITH AUTHORIZATION FOR INITIAL COMMISSIONING AND REFRACTORY CURING PERIODS

CONDITIONS

1. This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. This unit is approved for operation at the following locations: SE/4 of Section 33 and SE/4 of Section 34, T28S, R21E, and SW/4 of Section 2 and NE/4, NW/4, SW/4 & SE/4 of Section 3, T29S, R21E. [District Rule 4102]
4. Permittee shall notify the District Compliance Division of each location at which the unit is located in excess of 24 hours. Such notification shall be made no later than 48 hours after starting operation at the location. [District Rule 1070]
5. This unit shall be equipped with a convection section with at least 235 square feet of heat transfer surface area per MMBtu/hr of maximum rated heat input (verified by manufacturer). [Public Resources Code 21000-21177, CEQA]
6. This unit shall be equipped with variable frequency drive high efficiency electrical motors driving the blower and water pump. [Public Resources Code 21000-21177, CEQA]

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (661) 392-5500 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT. This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Sayed Sadredin, Executive Director / APCO

7. Particulate matter emissions shall not exceed 0.1 grain/dscf at operating conditions, nor 0.1 grain/dscf calculated to 12% CO₂, nor 10 lb/hr. [District Rules 4201, 4301, 5.1 and 5.2.3] Federally Enforceable Through Title V Permit
8. The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap, roof overhang, or any other obstruction. [District Rule 4102] Federally Enforceable Through Title V Permit
9. The unit shall only be fired on natural gas with sulfur content not to exceed 0.75 gr-S/100 scf. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
10. Emission rates, except during startup, shutdown, initial commissioning and refractory curing, shall not exceed any of the following limits: NO_x: 5 ppmvd @ 3% O₂ or 0.0061 lb-NO_x/MMBtu; PM₁₀: 0.0076 lb-PM₁₀/MMBtu; CO: 25 ppmvd @ 3% O₂ or 0.0185 lb-CO/MMBtu or VOC: 0.003 lb-VOC/MMBtu. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
11. Emission rates during startup, shutdown and refractory curing shall not exceed: particulate matter - 10 pounds per hour, or 0.1 grains/dscf calculated to 12% CO₂; sulfur - 200 pounds of SO₂ per hour, or 2000 ppmv as SO₂, or 0.11 pounds sulfur (as S) per MMBtu on average-wide basis for all units in Rule 4406 plan; NO₂ - 140 pounds per hour or 0.14 pounds per MMBtu. [District Rules 4101, 4102, 4301, 4405, 4406 and 4801] Federally Enforceable Through Title V Permit
12. The initial commissioning period is the time required to complete the necessary safety checks, curing of refractory material and the performance tuning of the burner and attendant systems to achieve compliance with the emission limits required by this permit. The commissioning period begins upon first firing of the unit and shall not extend beyond the first 135 hours of actual burner operation. [District Rule 2201] Federally Enforceable Through Title V Permit
13. The refractory curing period is the time required to gradually increase the firing rate and internal temperature of a unit to thermally temper and set the optimal properties of new refractory material that has been installed as part of a unit's initial commissioning or has been replaced as part of a subsequent maintenance or repair procedure. The refractory curing period following the replacement of material as part of a maintenance or repair procedure shall not exceed 30 hours total of actual burner operation per occurrence. [District Rule 2201] Federally Enforceable Through Title V Permit
14. During the initial commissioning period and any refractory curing period, operator shall limit emissions to the extent possible by optimizing the performance of the low NO_x burner and flue gas recirculation system as can be accommodated by individual initial commissioning and refractory curing activities, by following good work practices and fuel conserving measures and by completing all work in an expeditious manner. Operator shall keep a record of the specific activities undertaken as part of the initial commissioning period and all refractory curing periods and the duration of each activity and shall make the records available for District inspection upon request. [District Rule 2201] Federally Enforceable Through Title V Permit
15. Any of units S-1547-1182 through '1200 may be installed provided that permitted annual emissions do not exceed any of the following limits: NO_x: 49,990 lb/yr; SO_x: 17,210 lb/yr; PM₁₀: 62,282 lb/yr; CO: 151,608 lb/yr or VOC: 24,585 lb/yr, consistent with the quantity of ERCs identified in this project. [District Rules 2201 and 4102] Federally Enforceable Through Title V Permit
16. Annual quantity of natural gas fuel burned in this steam generator shall not exceed 745,000 MMBtu/year. [District Rule 2201] Federally Enforceable Through Title V Permit
17. Duration of start-up and shutdown shall not exceed 2 hours each per occurrence. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
18. Duration of refractory curing shall not exceed 30 hours per each occurrence. Permittee shall keep accurate records of refractory curing duration and make records readily available to the District upon request. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
19. Permittee shall maintain records of duration of each start-up and shutdown, and refractory curing, for a period of five years and make such records readily available for District inspection upon request. [District Rule 4320] Federally Enforceable Through Title V Permit
20. A source test to demonstrate compliance with NO_x and CO emission limits shall be performed within 60 days of startup of this unit. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

21. Source testing to measure natural gas-combustion NO_x and CO emissions from this unit shall be conducted at least once every twelve (12) months (no more than 30 days before or after the required annual source test date). After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months (no more than 30 days before or after the required 36-month source test date). If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
22. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit
23. For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit the test cannot be used to demonstrate compliance with an applicable limit. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
24. The following test methods shall be used: NO_x (ppmv) - EPA Method 7E or ARB Method 100, NO_x (lb/MMBtu) - EPA Method 19; CO (ppmv) - EPA Method 10 or ARB Method 100; Stack gas oxygen (O₂) - EPA Method 3 or 3A or ARB Method 100; stack gas velocities - EPA Method 2; Stack gas moisture content - EPA Method 4; SO_x - EPA Method 6C or 8 or ARB Method 100; fuel gas sulfur as H₂S content - EPA Method 11 or 15; and fuel hhv (MMBtu) - ASTM D 1826 or D 1945 in conjunction with ASTM D 3588. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
25. The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
26. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit
27. The permittee shall monitor and record the stack concentration of NO_x, CO, and O₂ at least once every month (in which a source test is not performed) using a portable analyzer that meets District specifications. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the unit unless monitoring has been performed within the last month. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
28. The permittee shall monitor and record the stack concentration of NH₃ at least once during each month in which a source test is not performed. NH₃ monitoring shall be conducted utilizing District approved gas-detection tubes or a District approved equivalent method. Monitoring shall not be required if the unit is not in operation; i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within one day of restarting the unit unless monitoring has been performed within the last month. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
29. If the NO_x or CO concentrations corrected to 3%, as measured by the portable analyzer, or the NH₃ concentrations corrected to 3% O₂, as measured by District approved gas-detection tubes, exceed the allowable emissions limit, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rules 4102, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

30. All NO_x, CO, O₂ and NH₃ emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. The NO_x, CO, and O₂ analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. NH₃ emission readings shall be measured in accordance with the gas sample tube manufacturer's specifications and recommendations. Portable analyzer emission readings taken shall be averaged over a 15 consecutive-minute sample period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive minute period. [District Rules 4102, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
31. The permittee shall maintain records of: (1) the date and time of NO_x, CO, O₂ and NH₃ measurements, (2) the O₂ concentration in percent by volume and the measured NO_x, CO and NH₃ concentrations corrected to 3% O₂, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, (5) method of determining the NH₃ concentration, and (6) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
32. Ammonia emissions readings shall be conducted at the time the NO_x, CO and O₂ readings are taken. The readings shall be converted to ppmvd @ 3% O₂. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
33. All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. Unless otherwise specified in the PTO, no determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0 of District Rule 4320. For the purposes of permittee-performed alternate monitoring, emissions measurements may be performed at any time after the unit reaches conditions representative of normal operation. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
34. Shorter time periods for demonstration of compliance after startup or re-ignition may be approved by the APCO by submittal of appropriate technical justification upon implementation of this ATC. [District Rule 2201] Federally Enforceable Through Title V Permit
35. PUC quality natural gas is any gaseous fuel where the sulfur content is no more than one-fourth (0.25) grain of hydrogen sulfide per one hundred (100) standard cubic feet, no more than five (5) grains of total sulfur per one hundred (100) standard cubic feet, and at least 80% methane by volume. [District Rule 4320] Federally Enforceable Through Title V Permit
36. If the steam generator is not fired on PUC-regulated natural gas and compliance is achieved through fuel sulfur content limitations, then the sulfur content of the fuel shall be determined by testing sulfur content at a location after all fuel sources are combined prior to incineration, or by performing mass balance calculations based on monitoring the sulfur content and volume of each fuel source. The sulfur content of the fuel shall be determined using the test methods referenced in this permit. [District Rule 4320] Federally Enforceable Through Title V Permit
37. When complying with sulfur emission limits by fuel analysis or by a combination of source testing and fuel analysis, permittee shall demonstrate compliance at least annually. [District Rule 4320] Federally Enforceable Through Title V Permit
38. If the unit is fired on PUC-regulated natural gas, valid purchase contracts, supplier certifications, tariff sheets, or transportation contracts may be used to satisfy the fuel sulfur content analysis, provided they establish the fuel sulfur concentration and higher heating value. [District Rule 4320] Federally Enforceable Through Title V Permit
39. All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
40. Prior to operating under this Authority to Construct, permittee shall surrender emission reduction credits for the following quantities of emissions: NO_x: 1,136 lb/quarter; SO_x: 391 lb/quarter; PM₁₀: 1,416 lb/quarter and VOC: 559 lb/quarter. Offset shall be provided at the applicable offset ratio specified in Table 4-2 of Rule 2201 (as amended 9/21/2006). [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

41. ERC Certificate Numbers S-796-2, S-2958-2, S-2395-1, S-1337-5 and S-1032-5 (or certificates split from these certificates) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201] Federally Enforceable Through Title V Permit
42. The permittee shall obtain written District approval for the use of any equivalent SCR equipment not specifically approved by this ATC. Approval of the equivalent equipment shall be made in writing and only after the District's determination that the submitted design and performance of the proposed alternative equipment is equivalent to the authorized equipment. [District Rule 2010] Federally Enforceable Through Title V Permit
43. The permittee's request for approval of equivalent equipment shall include the make, model, manufacturer's maximum rating, manufacturer's guaranteed emissions rates, equipment drawing(s) and operational characteristics/parameters. [District Rule 2010] Federally Enforceable Through Title V Permit
44. ATC S-1547-1184-0 shall be canceled upon implementation of this ATC. [District Rule 2201] Federally Enforceable Through Title V Permit



AUTHORITY TO CONSTRUCT

PERMIT NO: S-1547-1185-1

ISSUANCE DATE: 03/29/2013

LEGAL OWNER OR OPERATOR: AERA ENERGY LLC
MAILING ADDRESS: PO BOX 11164
BAKERSFIELD, CA 93389-1164

LOCATION: HEAVY OIL WESTERN STATIONARY SOURCE
KERN COUNTY, CA

EQUIPMENT DESCRIPTION:

MODIFICATION OF 85 MMBTU/HR NATURAL GAS-FIRED STEAM GENERATOR WITH COEN MODEL QLN-ULN ULTRA LOW NOX BURNER, OR NORTH AMERICAN MODEL MAGNA FLAME LEX ULTRA LOW NOX BURNER, OR ADVANCED COMBUSTION TECHNOLOGY GIDEON ULTRA LOW NOX BURNER OR EQUIVALENT, APPROVED TO OPERATE AT VARIOUS SPECIFIED LOCATIONS: REISSUE S-1547-1185-0 WITH AUTHORIZATION FOR INITIAL COMMISSIONING AND REFRACTORY CURING PERIODS

CONDITIONS

1. This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. This unit is approved for operation at the following locations: SE/4 of Section 33 and SE/4 of Section 34, T28S, R21E, and SW/4 of Section 2 and NE/4, NW/4, SW/4 & SE/4 of Section 3, T29S, R21E. [District Rule 4102]
4. Permittee shall notify the District Compliance Division of each location at which the unit is located in excess of 24 hours. Such notification shall be made no later than 48 hours after starting operation at the location. [District Rule 1070] Federally Enforceable Through Title V Permit
5. This unit shall be equipped with a convection section with at least 235 square feet of heat transfer surface area per MMBtu/hr of maximum rated heat input (verified by manufacturer). [Public Resources Code 21000-21177, CEQA]

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (661) 392-5500 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT. This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Sayed Sadredin, Executive Director / APCO

6. This unit shall be equipped with variable frequency drive high efficiency electrical motors driving the blower and water pump. [Public Resources Code 21000-21177, CEQA]
7. Particulate matter emissions shall not exceed 0.1 grain/dscf at operating conditions, nor 0.1 grain/dscf calculated to 12% CO₂, nor 10 lb/hr. [District Rules 4201, 4301, 5.1 and 5.2.3] Federally Enforceable Through Title V Permit
8. The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap, roof overhang, or any other obstruction. [District Rule 4102]
9. The unit shall only be fired on natural gas with sulfur content not to exceed 0.75 gr-S/100 scf. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
10. Emission rates, except during startup, shutdown, initial commissioning and refractory curing, shall not exceed any of the following limits: NO_x: 5 ppmvd @ 3% O₂ or 0.0061 lb-NO_x/MMBtu; PM₁₀: 0.0076 lb-PM₁₀/MMBtu; CO: 25 ppmvd @ 3% O₂ or 0.0185 lb-CO/MMBtu or VOC: 0.003 lb-VOC/MMBtu. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
11. Emission rates during startup, shutdown and refractory curing shall not exceed: particulate matter - 10 pounds per hour, or 0.1 grains/dscf calculated to 12% CO₂; sulfur - 200 pounds of SO₂ per hour, or 2000 ppmv as SO₂, or 0.11 pounds sulfur (as S) per MMBtu on average-wide basis for all units in Rule 4406 plan; NO₂ - 140 pounds per hour or 0.14 pounds per MMBtu. [District Rules 4101, 4102, 4301, 4405, 4406 and 4801] Federally Enforceable Through Title V Permit
12. The initial commissioning period is the time required to complete the necessary safety checks, curing of refractory material and the performance tuning of the burner and attendant systems to achieve compliance with the emission limits required by this permit. The commissioning period begins upon first firing of the unit and shall not extend beyond the first 135 hours of actual burner operation. [District Rule 2201] Federally Enforceable Through Title V Permit
13. The refractory curing period is the time required to gradually increase the firing rate and internal temperature of a unit to thermally temper and set the optimal properties of new refractory material that has been installed as part of a unit's initial commissioning or has been replaced as part of a subsequent maintenance or repair procedure. The refractory curing period following the replacement of material as part of a maintenance or repair procedure shall not exceed 30 hours total of actual burner operation per occurrence. [District Rule 2201] Federally Enforceable Through Title V Permit
14. During the initial commissioning period and any refractory curing period, operator shall limit emissions to the extent possible by optimizing the performance of the low NO_x burner and flue gas recirculation system as can be accommodated by individual initial commissioning and refractory curing activities, by following good work practices and fuel conserving measures and by completing all work in an expeditious manner. Operator shall keep a record of the specific activities undertaken as part of the initial commissioning period and all refractory curing periods and the duration of each activity and shall make the records available for District inspection upon request. [District Rule 2201] Federally Enforceable Through Title V Permit
15. Any of units S-1547-1182 through '-1200 may be installed provided that permitted annual emissions do not exceed any of the following limits: NO_x: 49,990 lb/yr; SO_x: 17,210 lb/yr; PM₁₀: 62,282 lb/yr; CO: 151,608 lb/yr or VOC: 24,585 lb/yr, consistent with the quantity of ERCs identified in this project. [District Rules 2201 and 4102] Federally Enforceable Through Title V Permit
16. Annual quantity of natural gas fuel burned in this steam generator shall not exceed 745,000 MMBTU/year. [District Rule 2201] Federally Enforceable Through Title V Permit
17. Duration of start-up and shutdown shall not exceed 2 hours each per occurrence. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
18. Duration of refractory curing shall not exceed 30 hours per each occurrence. Permittee shall keep accurate records of refractory curing duration and make records readily available to the District upon request. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
19. Permittee shall maintain records of duration of each start-up and shutdown, and refractory curing, for a period of five years and make such records readily available for District inspection upon request. [District Rule 4320] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

20. A source test to demonstrate compliance with NO_x and CO emission limits shall be performed within 60 days of startup of this unit. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
21. Source testing to measure natural gas-combustion NO_x and CO emissions from this unit shall be conducted at least once every twelve (12) months (no more than 30 days before or after the required annual source test date). After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months (no more than 30 days before or after the required 36-month source test date). If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
22. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit
23. For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit the test cannot be used to demonstrate compliance with an applicable limit. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
24. The following test methods shall be used: NO_x (ppmv) - EPA Method 7E or ARB Method 100, NO_x (lb/MMBtu) - EPA Method 19; CO (ppmv) - EPA Method 10 or ARB Method 100; Stack gas oxygen (O₂) - EPA Method 3 or 3A or ARB Method 100; stack gas velocities - EPA Method 2; Stack gas moisture content - EPA Method 4; SO_x - EPA Method 6C or 8 or ARB Method 100; fuel gas sulfur as H₂S content - EPA Method 11 or 15; and fuel hhv (MMBtu) - ASTM D 1826 or D 1945 in conjunction with ASTM D 3588. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
25. The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
26. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit
27. The permittee shall monitor and record the stack concentration of NO_x, CO, and O₂ at least once every month (in which a source test is not performed) using a portable analyzer that meets District specifications. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the unit unless monitoring has been performed within the last month. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
28. If the NO_x or CO concentrations corrected to 3%, as measured by the portable analyzer, exceed the allowable emissions limit, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rules 4102, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
29. All NO_x, CO, and O₂ emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. The NO_x, CO, and O₂ analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute sample period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive minute period. [District Rules 4102, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

30. The permittee shall maintain records of: (1) the date and time of NO_x, CO and O₂ measurements, (2) the O₂ concentration in percent by volume and the measured NO_x and CO concentrations corrected to 3% O₂, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
31. All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. Unless otherwise specified in the PTO, no determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0 of District Rule 4320. For the purposes of permittee-performed alternate monitoring, emissions measurements may be performed at any time after the unit reaches conditions representative of normal operation. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
32. Shorter time periods for demonstration of compliance after startup or re-ignition may be approved by the APCO by submittal of appropriate technical justification upon implementation of this ATC. [District Rule 2201] Federally Enforceable Through Title V Permit
33. PUC quality natural gas is any gaseous fuel where the sulfur content is no more than one-fourth (0.25) grain of hydrogen sulfide per one hundred (100) standard cubic feet, no more than five (5) grains of total sulfur per one hundred (100) standard cubic feet, and at least 80% methane by volume. [District Rule 4320] Federally Enforceable Through Title V Permit
34. If the steam generator is not fired on PUC-regulated natural gas and compliance is achieved through fuel sulfur content limitations, then the sulfur content of the fuel shall be determined by testing sulfur content at a location after all fuel sources are combined prior to incineration, or by performing mass balance calculations based on monitoring the sulfur content and volume of each fuel source. The sulfur content of the fuel shall be determined using the test methods referenced in this permit. [District Rule 4320] Federally Enforceable Through Title V Permit
35. When complying with sulfur emission limits by fuel analysis or by a combination of source testing and fuel analysis, permittee shall demonstrate compliance at least annually. [District Rule 4320] Federally Enforceable Through Title V Permit
36. If the unit is fired on PUC-regulated natural gas, valid purchase contracts, supplier certifications, tariff sheets, or transportation contracts may be used to satisfy the fuel sulfur content analysis, provided they establish the fuel sulfur concentration and higher heating value. [District Rule 4320] Federally Enforceable Through Title V Permit
37. All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
38. Prior to operating under this Authority to Construct, permittee shall surrender emission reduction credits for the following quantities of emissions: NO_x: 1,136 lb/quarter; SO_x: 391 lb/quarter; PM₁₀: 1,416 lb/quarter and VOC: 559 lb/quarter. Offset shall be provided at the applicable offset ratio specified in Table 4-2 of Rule 2201 (as amended 9/21/2006). [District Rule 2201] Federally Enforceable Through Title V Permit
39. ERC Certificate Numbers S-796-2, S-2958-2, S-2395-1, S-1337-5 and S-1032-5 (or certificates split from these certificates) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201] Federally Enforceable Through Title V Permit
40. The permittee shall obtain written District approval for the use of any equivalent equipment not specifically approved by this ATC. Approval of the equivalent equipment shall be made in writing and only after the District's determination that the submitted design and performance of the proposed alternative equipment is equivalent to the authorized equipment. [District Rule 2010] Federally Enforceable Through Title V Permit
41. The permittee's request for approval of equivalent equipment shall include the make, model, manufacturer's maximum rating, manufacturer's guaranteed emissions rates, equipment drawing(s) and operational characteristics/parameters. [District Rule 2010] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

42. ATC S-1547-1185-0 shall be canceled upon implementation of this ATC. [District Rule 2201] Federally Enforceable Through Title V Permit



AUTHORITY TO CONSTRUCT

PERMIT NO: S-1547-1186-1

ISSUANCE DATE: 03/29/2013

LEGAL OWNER OR OPERATOR: AERA ENERGY LLC
MAILING ADDRESS: PO BOX 11164
BAKERSFIELD, CA 93389-1164

LOCATION: HEAVY OIL WESTERN STATIONARY SOURCE
KERN COUNTY, CA

EQUIPMENT DESCRIPTION:

MODIFICATION OF 85 MMBTU/HR NATURAL GAS-FIRED STEAM GENERATOR WITH COEN MODEL QLN-ULN ULTRA LOW NOX BURNER, OR NORTH AMERICAN MODEL MAGNA FLAME LEX ULTRA LOW NOX BURNER, OR ADVANCED COMBUSTION TECHNOLOGY GIDEON ULTRA LOW NOX BURNER OR EQUIVALENT, APPROVED TO OPERATE AT VARIOUS SPECIFIED LOCATIONS: REISSUE S-1547-1186-0 WITH AUTHORIZATION FOR INITIAL COMMISSIONING AND REFRACTORY CURING PERIODS

CONDITIONS

1. This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. This unit is approved for operation at the following locations: SE/4 of Section 33 and SE/4 of Section 34, T28S, R21E, and SW/4 of Section 2 and NE/4, NW/4, SW/4 & SE/4 of Section 3, T29S, R21E. [District Rule 4102]
4. Permittee shall notify the District Compliance Division of each location at which the unit is located in excess of 24 hours. Such notification shall be made no later than 48 hours after starting operation at the location. [District Rule 1070] Federally Enforceable Through Title V Permit
5. This unit shall be equipped with a convection section with at least 235 square feet of heat transfer surface area per MMBtu/hr of maximum rated heat input (verified by manufacturer). [Public Resources Code 21000-21177, CEQA]

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (661) 392-5500 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT. This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Sayed Sadredin, Executive Director / APCO

6. This unit shall be equipped with variable frequency drive high efficiency electrical motors driving the blower and water pump. [Public Resources Code 21000-21177, CEQA]
7. Particulate matter emissions shall not exceed 0.1 grain/dscf at operating conditions, nor 0.1 grain/dscf calculated to 12% CO₂, nor 10 lb/hr. [District Rules 4201, 4301, 5.1 and 5.2.3] Federally Enforceable Through Title V Permit
8. The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap, roof overhang, or any other obstruction. [District Rule 4102]
9. The unit shall only be fired on natural gas with sulfur content not to exceed 0.75 gr-S/100 scf. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
10. Emission rates, except during startup, shutdown, initial commissioning and refractory curing, shall not exceed any of the following limits: NO_x: 5 ppmvd @ 3% O₂ or 0.0061 lb-NO_x/MMBtu; PM₁₀: 0.0076 lb-PM₁₀/MMBtu; CO: 25 ppmvd @ 3% O₂ or 0.0185 lb-CO/MMBtu or VOC: 0.003 lb-VOC/MMBtu. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
11. Emission rates during startup, shutdown and refractory curing shall not exceed: particulate matter - 10 pounds per hour, or 0.1 grains/dscf calculated to 12% CO₂; sulfur - 200 pounds of SO₂ per hour, or 2000 ppmv as SO₂, or 0.11 pounds sulfur (as S) per MMBtu on average-wide basis for all units in Rule 4406 plan; NO₂ - 140 pounds per hour or 0.14 pounds per MMBtu. [District Rules 4101, 4102, 4301, 4405, 4406 and 4801] Federally Enforceable Through Title V Permit
12. The initial commissioning period is the time required to complete the necessary safety checks, curing of refractory material and the performance tuning of the burner and attendant systems to achieve compliance with the emission limits required by this permit. The commissioning period begins upon first firing of the unit and shall not extend beyond the first 135 hours of actual burner operation. [District Rule 2201] Federally Enforceable Through Title V Permit
13. The refractory curing period is the time required to gradually increase the firing rate and internal temperature of a unit to thermally temper and set the optimal properties of new refractory material that has been installed as part of a unit's initial commissioning or has been replaced as part of a subsequent maintenance or repair procedure. The refractory curing period following the replacement of material as part of a maintenance or repair procedure shall not exceed 30 hours total of actual burner operation per occurrence. [District Rule 2201] Federally Enforceable Through Title V Permit
14. During the initial commissioning period and any refractory curing period, operator shall limit emissions to the extent possible by optimizing the performance of the low NO_x burner and flue gas recirculation system as can be accommodated by individual initial commissioning and refractory curing activities, by following good work practices and fuel conserving measures and by completing all work in an expeditious manner. Operator shall keep a record of the specific activities undertaken as part of the initial commissioning period and all refractory curing periods and the duration of each activity and shall make the records available for District inspection upon request. [District Rule 2201] Federally Enforceable Through Title V Permit
15. Any of units S-1547-1182 through -1200 may be installed provided that permitted annual emissions do not exceed any of the following limits: NO_x: 49,990 lb/yr; SO_x: 17,210 lb/yr; PM₁₀: 62,282 lb/yr; CO: 151,608 lb/yr or VOC: 24,585 lb/yr, consistent with the quantity of ERCs identified in this project. [District Rules 2201 and 4102] Federally Enforceable Through Title V Permit
16. Annual quantity of natural gas fuel burned in this steam generator shall not exceed 745,000 MMBTU/year. [District Rule 2201] Federally Enforceable Through Title V Permit
17. Duration of start-up and shutdown shall not exceed 2 hours each per occurrence. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
18. Duration of refractory curing shall not exceed 30 hours per each occurrence. Permittee shall keep accurate records of refractory curing duration and make records readily available to the District upon request. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
19. Permittee shall maintain records of duration of each start-up and shutdown, and refractory curing, for a period of five years and make such records readily available for District inspection upon request. [District Rule 4320] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

20. A source test to demonstrate compliance with NO_x and CO emission limits shall be performed within 60 days of startup of this unit. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
21. Source testing to measure natural gas-combustion NO_x and CO emissions from this unit shall be conducted at least once every twelve (12) months (no more than 30 days before or after the required annual source test date). After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months (no more than 30 days before or after the required 36-month source test date). If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
22. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit
23. For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit the test cannot be used to demonstrate compliance with an applicable limit. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
24. The following test methods shall be used: NO_x (ppmv) - EPA Method 7E or ARB Method 100, NO_x (lb/MMBtu) - EPA Method 19; CO (ppmv) - EPA Method 10 or ARB Method 100; Stack gas oxygen (O₂) - EPA Method 3 or 3A or ARB Method 100; stack gas velocities - EPA Method 2; Stack gas moisture content - EPA Method 4; SO_x - EPA Method 6C or 8 or ARB Method 100; fuel gas sulfur as H₂S content - EPA Method 11 or 15; and fuel hhv (MMBtu) - ASTM D 1826 or D 1945 in conjunction with ASTM D 3588. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
25. The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
26. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit
27. The permittee shall monitor and record the stack concentration of NO_x, CO, and O₂ at least once every month (in which a source test is not performed) using a portable analyzer that meets District specifications. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the unit unless monitoring has been performed within the last month. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
28. If the NO_x or CO concentrations corrected to 3%, as measured by the portable analyzer, exceed the allowable emissions limit, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rules 4102, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
29. All NO_x, CO, and O₂ emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. The NO_x, CO, and O₂ analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute sample period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive minute period. [District Rules 4102, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

30. The permittee shall maintain records of: (1) the date and time of NO_x, CO and O₂ measurements, (2) the O₂ concentration in percent by volume and the measured NO_x and CO concentrations corrected to 3% O₂, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
31. All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. Unless otherwise specified in the PTO, no determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0 of District Rule 4320. For the purposes of permittee-performed alternate monitoring, emissions measurements may be performed at any time after the unit reaches conditions representative of normal operation. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
32. Shorter time periods for demonstration of compliance after startup or re-ignition may be approved by the APCO by submittal of appropriate technical justification upon implementation of this ATC. [District Rule 2201] Federally Enforceable Through Title V Permit
33. PUC quality natural gas is any gaseous fuel where the sulfur content is no more than one-fourth (0.25) grain of hydrogen sulfide per one hundred (100) standard cubic feet, no more than five (5) grains of total sulfur per one hundred (100) standard cubic feet, and at least 80% methane by volume. [District Rule 4320] Federally Enforceable Through Title V Permit
34. If the steam generator is not fired on PUC-regulated natural gas and compliance is achieved through fuel sulfur content limitations, then the sulfur content of the fuel shall be determined by testing sulfur content at a location after all fuel sources are combined prior to incineration, or by performing mass balance calculations based on monitoring the sulfur content and volume of each fuel source. The sulfur content of the fuel shall be determined using the test methods referenced in this permit. [District Rule 4320] Federally Enforceable Through Title V Permit
35. When complying with sulfur emission limits by fuel analysis or by a combination of source testing and fuel analysis, permittee shall demonstrate compliance at least annually. [District Rule 4320] Federally Enforceable Through Title V Permit
36. If the unit is fired on PUC-regulated natural gas, valid purchase contracts, supplier certifications, tariff sheets, or transportation contracts may be used to satisfy the fuel sulfur content analysis, provided they establish the fuel sulfur concentration and higher heating value. [District Rule 4320] Federally Enforceable Through Title V Permit
37. All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
38. Prior to operating under this Authority to Construct, permittee shall **surrender** emission reduction credits for the following quantities of emissions: NO_x: 1,136 lb/quarter; SO_x: 391 lb/quarter; PM₁₀: 1,416 lb/quarter and VOC: 559 lb/quarter. Offset shall be provided at the applicable offset ratio specified in Table 4-2 of Rule 2201 (as amended 9/21/2006). [District Rule 2201] Federally Enforceable Through Title V Permit
39. ERC Certificate Numbers S-796-2, S-2958-2, S-2395-1, S-1337-5 and S-1032-5 (or certificates split from these **certificates**) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201] Federally Enforceable Through Title V Permit
40. The permittee shall obtain written District approval for the use of any equivalent equipment not specifically approved by this ATC. Approval of the equivalent equipment shall be made in writing and only after the District's determination that the submitted design and performance of the proposed alternative equipment is equivalent to the authorized equipment. [District Rule 2010] Federally Enforceable Through Title V Permit
41. The permittee's request for approval of equivalent equipment shall include the make, model, manufacturer's maximum rating, manufacturer's guaranteed emissions rates, equipment drawing(s) and operational characteristics/parameters. [District Rule 2010] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

42. ATC S-1547-1182-0 shall be canceled upon implementation of this ATC. [District Rule 2201] Federally Enforceable Through Title V Permit



AUTHORITY TO CONSTRUCT

PERMIT NO: S-1547-1187-1

ISSUANCE DATE: 03/29/2013

LEGAL OWNER OR OPERATOR: AERA ENERGY LLC

MAILING ADDRESS: PO BOX 11164
BAKERSFIELD, CA 93389-1164

LOCATION: HEAVY OIL WESTERN STATIONARY SOURCE
KERN COUNTY, CA

EQUIPMENT DESCRIPTION:

MODIFICATION OF 85 MMBTU/HR NATURAL GAS-FIRED STEAM GENERATOR WITH COEN MODEL QLN-ULN ULTRA LOW NOX BURNER, OR NORTH AMERICAN MODEL MAGNA FLAME LEX ULTRA LOW NOX BURNER, OR ADVANCED COMBUSTION TECHNOLOGY GIDEON ULTRA LOW NOX BURNER OR EQUIVALENT, APPROVED TO OPERATE AT VARIOUS SPECIFIED LOCATIONS: REISSUE S-1547-1187-0 WITH AUTHORIZATION FOR INITIAL COMMISSIONING AND REFRACTORY CURING PERIODS

CONDITIONS

1. This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. This unit is approved for operation at the following locations: SE/4 of Section 33 and SE/4 of Section 34, T28S, R21E, and SW/4 of Section 2 and NE/4, NW/4, SW/4 & SE/4 of Section 3, T29S, R21E. [District Rule 4102]
4. Permittee shall notify the District Compliance Division of each location at which the unit is located in excess of 24 hours. Such notification shall be made no later than 48 hours after starting operation at the location. [District Rule 1070] Federally Enforceable Through Title V Permit
5. This unit shall be equipped with a convection section with at least 235 square feet of heat transfer surface area per MMBtu/hr of maximum rated heat input (verified by manufacturer). [Public Resources Code 21000-21177, CEQA]

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (661) 392-5500 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT. This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Seyed Sadredin, Executive Director / APCO

6. This unit shall be equipped with variable frequency drive high efficiency electrical motors driving the blower and water pump. [Public Resources Code 21000-21177, CEQA]
7. Particulate matter emissions shall not exceed 0.1 grain/dscf at operating conditions, nor 0.1 grain/dscf calculated to 12% CO₂, nor 10 lb/hr. [District Rules 4201, 4301, 5.1 and 5.2.3] Federally Enforceable Through Title V Permit
8. The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap, roof overhang, or any other obstruction. [District Rule 4102]
9. The unit shall only be fired on natural gas with sulfur content not to exceed 0.75 gr-S/100 scf. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
10. Emission rates, except during startup, shutdown, initial commissioning and refractory curing, shall not exceed any of the following limits: NO_x: 5 ppmvd @ 3% O₂ or 0.0061 lb-NO_x/MMBtu; PM₁₀: 0.0076 lb-PM₁₀/MMBtu; CO: 25 ppmvd @ 3% O₂ or 0.0185 lb-CO/MMBtu or VOC: 0.003 lb-VOC/MMBtu. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
11. Emission rates during startup, shutdown and refractory curing shall not exceed: particulate matter - 10 pounds per hour, or 0.1 grains/dscf calculated to 12% CO₂; sulfur - 200 pounds of SO₂ per hour, or 2000 ppmv as SO₂, or 0.11 pounds sulfur (as S) per MMBtu on average-wide basis for all units in Rule 4406 plan; NO₂ - 140 pounds per hour or 0.14 pounds per MMBtu. [District Rules 4101, 4102, 4301, 4405, 4406 and 4801] Federally Enforceable Through Title V Permit
12. The initial commissioning period is the time required to complete the necessary safety checks, curing of refractory material and the performance tuning of the burner and attendant systems to achieve compliance with the emission limits required by this permit. The commissioning period begins upon first firing of the unit and shall not extend beyond the first 135 hours of actual burner operation. [District Rule 2201] Federally Enforceable Through Title V Permit
13. The refractory curing period is the time required to gradually increase the firing rate and internal temperature of a unit to thermally temper and set the optimal properties of new refractory material that has been installed as part of a unit's initial commissioning or has been replaced as part of a subsequent maintenance or repair procedure. The refractory curing period following the replacement of material as part of a maintenance or repair procedure shall not exceed 30 hours total of actual burner operation per occurrence. [District Rule 2201] Federally Enforceable Through Title V Permit
14. During the initial commissioning period and any refractory curing period, operator shall limit emissions to the extent possible by optimizing the performance of the low NO_x burner and flue gas recirculation system as can be accommodated by individual initial commissioning and refractory curing activities, by following good work practices and fuel conserving measures and by completing all work in an expeditious manner. Operator shall keep a record of the specific activities undertaken as part of the initial commissioning period and all refractory curing periods and the duration of each activity and shall make the records available for District inspection upon request. [District Rule 2201] Federally Enforceable Through Title V Permit
15. Any of units S-1547-1182 through S-1200 may be installed provided that permitted annual emissions do not exceed any of the following limits: NO_x: 49,990 lb/yr; SO_x: 17,210 lb/yr; PM₁₀: 62,282 lb/yr; CO: 151,608 lb/yr or VOC: 24,585 lb/yr, consistent with the quantity of ERCs identified in this project. [District Rules 2201 and 4102] Federally Enforceable Through Title V Permit
16. Annual quantity of natural gas fuel burned in this steam generator shall not exceed 745,000 MMBTU/year. [District Rule 2201] Federally Enforceable Through Title V Permit
17. Duration of start-up and shutdown shall not exceed 2 hours each per occurrence. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
18. Duration of refractory curing shall not exceed 30 hours per each occurrence. Permittee shall keep accurate records of refractory curing duration and make records readily available to the District upon request. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
19. Permittee shall maintain records of duration of each start-up and shutdown, and refractory curing, for a period of five years and make such records readily available for District inspection upon request. [District Rule 4320] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

20. A source test to demonstrate compliance with NO_x and CO emission limits shall be performed within 60 days of startup of this unit. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
21. Source testing to measure natural gas-combustion NO_x and CO emissions from this unit shall be conducted at least once every twelve (12) months (no more than 30 days before or after the required annual source test date). After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months (no more than 30 days before or after the required 36-month source test date). If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
22. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit
23. For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit the test cannot be used to demonstrate compliance with an applicable limit. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
24. The following test methods shall be used: NO_x (ppmv) - EPA Method 7E or ARB Method 100, NO_x (lb/MMBtu) - EPA Method 19; CO (ppmv) - EPA Method 10 or ARB Method 100; Stack gas oxygen (O₂) - EPA Method 3 or 3A or ARB Method 100; stack gas velocities - EPA Method 2; Stack gas moisture content - EPA Method 4; SO_x - EPA Method 6C or 8 or ARB Method 100; fuel gas sulfur as H₂S content - EPA Method 11 or 15; and fuel hhv (MMBtu) - ASTM D 1826 or D 1945 in conjunction with ASTM D 3588. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
25. The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
26. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit
27. The permittee shall monitor and record the stack concentration of NO_x, CO, and O₂ at least once every month (in which a source test is not performed) using a portable analyzer that meets District specifications. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the unit unless monitoring has been performed within the last month. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
28. If the NO_x or CO concentrations corrected to 3%, as measured by the portable analyzer, exceed the allowable emissions limit, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rules 4102, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
29. All NO_x, CO, and O₂ emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. The NO_x, CO, and O₂ analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute sample period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive minute period. [District Rules 4102, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

30. The permittee shall maintain records of: (1) the date and time of NO_x, CO and O₂ measurements, (2) the O₂ concentration in percent by volume and the measured NO_x and CO concentrations corrected to 3% O₂, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
31. All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. Unless otherwise specified in the PTO, no determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0 of District Rule 4320. For the purposes of permittee-performed alternate monitoring, emissions measurements may be performed at any time after the unit reaches conditions representative of normal operation. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
32. Shorter time periods for demonstration of compliance after startup or re-ignition may be approved by the APCO by submittal of appropriate technical justification upon implementation of this ATC. [District Rule 2201] Federally Enforceable Through Title V Permit
33. PUC quality natural gas is any gaseous fuel where the sulfur content is no more than one-fourth (0.25) grain of hydrogen sulfide per one hundred (100) standard cubic feet, no more than five (5) grains of total sulfur per one hundred (100) standard cubic feet, and at least 80% methane by volume. [District Rule 4320] Federally Enforceable Through Title V Permit
34. If the steam generator is not fired on PUC-regulated natural gas and compliance is achieved through fuel sulfur content limitations, then the sulfur content of the fuel shall be determined by testing sulfur content at a location after all fuel sources are combined prior to incineration, or by performing mass balance calculations based on monitoring the sulfur content and volume of each fuel source. The sulfur content of the fuel shall be determined using the test methods referenced in this permit. [District Rule 4320] Federally Enforceable Through Title V Permit
35. When complying with sulfur emission limits by fuel analysis or by a combination of source testing and fuel analysis, permittee shall demonstrate compliance at least annually. [District Rule 4320] Federally Enforceable Through Title V Permit
36. If the unit is fired on PUC-regulated natural gas, valid purchase contracts, supplier certifications, tariff sheets, or transportation contracts may be used to satisfy the fuel sulfur content analysis, provided they establish the fuel sulfur concentration and higher heating value. [District Rule 4320] Federally Enforceable Through Title V Permit
37. All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
38. Prior to operating under this Authority to Construct, permittee shall surrender emission reduction credits for the following quantities of emissions: NO_x: 1,136 lb/quarter; SO_x: 391 lb/quarter; PM₁₀: 1,416 lb/quarter and VOC: 559 lb/quarter. Offset shall be provided at the applicable offset ratio specified in Table 4-2 of Rule 2201 (as amended 9/21/2006). [District Rule 2201] Federally Enforceable Through Title V Permit
39. ERC Certificate Numbers S-796-2, S-2958-2, S-2395-1, S-1337-5 and S-1032-5 (or certificates split from these certificates) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201] Federally Enforceable Through Title V Permit
40. The permittee shall obtain written District approval for the use of any equivalent equipment not specifically approved by this ATC. Approval of the equivalent equipment shall be made in writing and only after the District's determination that the submitted design and performance of the proposed alternative equipment is equivalent to the authorized equipment. [District Rule 2010] Federally Enforceable Through Title V Permit
41. The permittee's request for approval of equivalent equipment shall include the make, model, manufacturer's maximum rating, manufacturer's guaranteed emissions rates, equipment drawing(s) and operational characteristics/parameters. [District Rule 2010] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

42. ATC S-1547-1182-0 shall be canceled upon implementation of this ATC. [District Rule 2201] Federally Enforceable Through Title V Permit



AUTHORITY TO CONSTRUCT

PERMIT NO: S-1547-1188-1

ISSUANCE DATE: 03/29/2013

LEGAL OWNER OR OPERATOR: AERA ENERGY LLC
MAILING ADDRESS: PO BOX 11164
BAKERSFIELD, CA 93389-1164

LOCATION: HEAVY OIL WESTERN STATIONARY SOURCE
KERN COUNTY, CA

EQUIPMENT DESCRIPTION:

MODIFICATION OF 85 MMBTU/HR NATURAL GAS-FIRED STEAM GENERATOR WITH COEN MODEL QLN-ULN ULTRA LOW NOX BURNER, OR NORTH AMERICAN MODEL MAGNA FLAME LEX ULTRA LOW NOX BURNER, OR ADVANCED COMBUSTION TECHNOLOGY GIDEON ULTRA LOW NOX BURNER OR EQUIVALENT, APPROVED TO OPERATE AT VARIOUS SPECIFIED LOCATIONS: REISSUE S-1547-1188-0 WITH AUTHORIZATION FOR INITIAL COMMISSIONING AND REFRACTORY CURING PERIODS

CONDITIONS

1. This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. This unit is approved for operation at the following locations: SE/4 of Section 33 and SE/4 of Section 34, T28S, R21E, and SW/4 of Section 2 and NE/4, NW/4, SW/4 & SE/4 of Section 3, T29S, R21E. [District Rule 4102]
4. Permittee shall notify the District Compliance Division of each location at which the unit is located in excess of 24 hours. Such notification shall be made no later than 48 hours after starting operation at the location. [District Rule 1070] Federally Enforceable Through Title V Permit
5. This unit shall be equipped with a convection section with at least 235 square feet of heat transfer surface area per MMBtu/hr of maximum rated heat input (verified by manufacturer). [Public Resources Code 21000-21177, CEQA]

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (661) 392-5500 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT. This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Seyed Sadredin, Executive Director / APCO

6. This unit shall be equipped with variable frequency drive high efficiency electrical motors driving the blower and water pump. [Public Resources Code 21000-21177, CEQA]
7. Particulate matter emissions shall not exceed 0.1 grain/dscf at operating conditions, nor 0.1 grain/dscf calculated to 12% CO₂, nor 10 lb/hr. [District Rules 4201, 4301, 5.1 and 5.2.3] Federally Enforceable Through Title V Permit
8. The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap, roof overhang, or any other obstruction. [District Rule 4102]
9. The unit shall only be fired on natural gas with sulfur content not to exceed 0.75 gr-S/100 scf. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
10. Emission rates, except during startup, shutdown, initial commissioning and refractory curing, shall not exceed any of the following limits: NO_x: 5 ppmvd @ 3% O₂ or 0.0061 lb-NO_x/MMBtu; PM₁₀: 0.0076 lb-PM₁₀/MMBtu; CO: 25 ppmvd @ 3% O₂ or 0.0185 lb-CO/MMBtu or VOC: 0.003 lb-VOC/MMBtu. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
11. Emission rates during startup, shutdown and refractory curing shall not exceed: particulate matter - 10 pounds per hour, or 0.1 grains/dscf calculated to 12% CO₂; sulfur - 200 pounds of SO₂ per hour, or 2000 ppmv as SO₂, or 0.11 pounds sulfur (as S) per MMBtu on average-wide basis for all units in Rule 4406 plan; NO₂ - 140 pounds per hour or 0.14 pounds per MMBtu. [District Rules 4101, 4102, 4301, 4405, 4406 and 4801] Federally Enforceable Through Title V Permit
12. The initial commissioning period is the time required to complete the necessary safety checks, curing of refractory material and the performance tuning of the burner and attendant systems to achieve compliance with the emission limits required by this permit. The commissioning period begins upon first firing of the unit and shall not extend beyond the first 135 hours of actual burner operation. [District Rule 2201] Federally Enforceable Through Title V Permit
13. The refractory curing period is the time required to gradually increase the firing rate and internal temperature of a unit to thermally temper and set the optimal properties of new refractory material that has been installed as part of a unit's initial commissioning or has been replaced as part of a subsequent maintenance or repair procedure. The refractory curing period following the replacement of material as part of a maintenance or repair procedure shall not exceed 30 hours total of actual burner operation per occurrence. [District Rule 2201] Federally Enforceable Through Title V Permit
14. During the initial commissioning period and any refractory curing period, operator shall limit emissions to the extent possible by optimizing the performance of the low NO_x burner and flue gas recirculation system as can be accommodated by individual initial commissioning and refractory curing activities, by following good work practices and fuel conserving measures and by completing all work in an expeditious manner. Operator shall keep a record of the specific activities undertaken as part of the initial commissioning period and all refractory curing periods and the duration of each activity and shall make the records available for District inspection upon request. [District Rule 2201] Federally Enforceable Through Title V Permit
15. Any of units S-1547-1182 through -1200 may be installed provided that permitted annual emissions do not exceed any of the following limits: NO_x: 49,990 lb/yr; SO_x: 17,210 lb/yr; PM₁₀: 62,282 lb/yr; CO: 151,608 lb/yr or VOC: 24,585 lb/yr, consistent with the quantity of ERCs identified in this project. [District Rules 2201 and 4102] Federally Enforceable Through Title V Permit
16. Annual quantity of natural gas fuel burned in this steam generator shall not exceed 745,000 MMBTU/year. [District Rule 2201] Federally Enforceable Through Title V Permit
17. Duration of start-up and shutdown shall not exceed 2 hours each per occurrence. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
18. Duration of refractory curing shall not exceed 30 hours per each occurrence. Permittee shall keep accurate records of refractory curing duration and make records readily available to the District upon request. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
19. Permittee shall maintain records of duration of each start-up and shutdown, and refractory curing, for a period of five years and make such records readily available for District inspection upon request. [District Rule 4320] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

20. A source test to demonstrate compliance with NO_x and CO emission limits shall be performed within 60 days of startup of this unit. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
21. Source testing to measure natural gas-combustion NO_x and CO emissions from this unit shall be conducted at least once every twelve (12) months (no more than 30 days before or after the required annual source test date). After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months (no more than 30 days before or after the required 36-month source test date). If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
22. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit
23. For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit the test cannot be used to demonstrate compliance with an applicable limit. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
24. The following test methods shall be used: NO_x (ppmv) - EPA Method 7E or ARB Method 100, NO_x (lb/MMBtu) - EPA Method 19; CO (ppmv) - EPA Method 10 or ARB Method 100; Stack gas oxygen (O₂) - EPA Method 3 or 3A or ARB Method 100; stack gas velocities - EPA Method 2; Stack gas moisture content - EPA Method 4; SO_x - EPA Method 6C or 8 or ARB Method 100; fuel gas sulfur as H₂S content - EPA Method 11 or 15; and fuel hhv (MMBtu) - ASTM D 1826 or D 1945 in conjunction with ASTM D 3588. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
25. The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
26. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit
27. The permittee shall monitor and record the stack concentration of NO_x, CO, and O₂ at least once every month (in which a source test is not performed) using a portable analyzer that meets District specifications. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the unit unless monitoring has been performed within the last month. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
28. If the NO_x or CO concentrations corrected to 3%, as measured by the portable analyzer, exceed the allowable emissions limit, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rules 4102, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
29. All NO_x, CO, and O₂ emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. The NO_x, CO, and O₂ analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute sample period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive minute period. [District Rules 4102, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

30. The permittee shall maintain records of: (1) the date and time of NO_x, CO and O₂ measurements, (2) the O₂ concentration in percent by volume and the measured NO_x and CO concentrations corrected to 3% O₂, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
31. All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. Unless otherwise specified in the PTO, no determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0 of District Rule 4320. For the purposes of permittee-performed alternate monitoring, emissions measurements may be performed at any time after the unit reaches conditions representative of normal operation. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
32. Shorter time periods for demonstration of compliance after startup or re-ignition may be approved by the APCO by submittal of appropriate technical justification upon implementation of this ATC. [District Rule 2201] Federally Enforceable Through Title V Permit
33. PUC quality natural gas is any gaseous fuel where the sulfur content is no more than one-fourth (0.25) grain of hydrogen sulfide per one hundred (100) standard cubic feet, no more than five (5) grains of total sulfur per one hundred (100) standard cubic feet, and at least 80% methane by volume. [District Rule 4320] Federally Enforceable Through Title V Permit
34. If the steam generator is not fired on PUC-regulated natural gas and compliance is achieved through fuel sulfur content limitations, then the sulfur content of the fuel shall be determined by testing sulfur content at a location after all fuel sources are combined prior to incineration, or by performing mass balance calculations based on monitoring the sulfur content and volume of each fuel source. The sulfur content of the fuel shall be determined using the test methods referenced in this permit. [District Rule 4320] Federally Enforceable Through Title V Permit
35. When complying with sulfur emission limits by fuel analysis or by a combination of source testing and fuel analysis, permittee shall demonstrate compliance at least annually. [District Rule 4320] Federally Enforceable Through Title V Permit
36. If the unit is fired on PUC-regulated natural gas, valid purchase contracts, supplier certifications, tariff sheets, or transportation contracts may be used to satisfy the fuel sulfur content analysis, provided they establish the fuel sulfur concentration and higher heating value. [District Rule 4320] Federally Enforceable Through Title V Permit
37. All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
38. Prior to operating under this Authority to Construct, permittee shall surrender emission reduction credits for the following quantities of emissions: NO_x: 1,136 lb/quarter; SO_x: 391 lb/quarter; PM₁₀: 1,416 lb/quarter and VOC: 559 lb/quarter. Offset shall be provided at the applicable offset ratio specified in Table 4-2 of Rule 2201 (as amended 9/21/2006). [District Rule 2201] Federally Enforceable Through Title V Permit
39. ERC Certificate Numbers S-796-2, S-2958-2, S-2395-1, S-1337-5 and S-1032-5 (or certificates split from these certificates) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201] Federally Enforceable Through Title V Permit
40. The permittee shall obtain written District approval for the use of any equivalent equipment not specifically approved by this ATC. Approval of the equivalent equipment shall be made in writing and only after the District's determination that the submitted design and performance of the proposed alternative equipment is equivalent to the authorized equipment. [District Rule 2010] Federally Enforceable Through Title V Permit
41. The permittee's request for approval of equivalent equipment shall include the make, model, manufacturer's maximum rating, manufacturer's guaranteed emissions rates, equipment drawing(s) and operational characteristics/parameters. [District Rule 2010] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

42. ATC S-1547-1188-0 shall be canceled upon implementation of this ATC. [District Rule 2201] Federally Enforceable Through Title V Permit



AUTHORITY TO CONSTRUCT

PERMIT NO: S-1547-1189-1

ISSUANCE DATE: 03/29/2013

LEGAL OWNER OR OPERATOR: AERA ENERGY LLC
MAILING ADDRESS: PO BOX 11164
BAKERSFIELD, CA 93389-1164

LOCATION: HEAVY OIL WESTERN STATIONARY SOURCE
KERN COUNTY, CA

EQUIPMENT DESCRIPTION:

MODIFICATION OF 85 MMBTU/HR NATURAL GAS-FIRED STEAM GENERATOR WITH COEN MODEL QLN-ULN ULTRA LOW NOX BURNER, OR NORTH AMERICAN MODEL MAGNA FLAME LEX ULTRA LOW NOX BURNER, OR ADVANCED COMBUSTION TECHNOLOGY GIDEON ULTRA LOW NOX BURNER OR EQUIVALENT, APPROVED TO OPERATE AT VARIOUS SPECIFIED LOCATIONS: REISSUE S-1547-1189-0 WITH AUTHORIZATION FOR INITIAL COMMISSIONING AND REFRACTORY CURING PERIODS

CONDITIONS

1. This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. This unit is approved for operation at the following locations: SE/4 of Section 33 and SE/4 of Section 34, T28S, R21E, and SW/4 of Section 2 and NE/4, NW/4, SW/4 & SE/4 of Section 3, T29S, R21E. [District Rule 4102]
4. Permittee shall notify the District Compliance Division of each location at which the unit is located in excess of 24 hours. Such notification shall be made no later than 48 hours after starting operation at the location. [District Rule 1070] Federally Enforceable Through Title V Permit
5. This unit shall be equipped with a convection section with at least 235 square feet of heat transfer surface area per MMBtu/hr of maximum rated heat input (verified by manufacturer). [Public Resources Code 21000-21177, CEQA]

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (661) 392-5500 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT. This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Seyed Sadredin, Executive Director / APCO

6. This unit shall be equipped with variable frequency drive high efficiency electrical motors driving the blower and water pump. [Public Resources Code 21000-21177, CEQA]
7. Particulate matter emissions shall not exceed 0.1 grain/dscf at operating conditions, nor 0.1 grain/dscf calculated to 12% CO₂, nor 10 lb/hr. [District Rules 4201, 4301, 5.1 and 5.2.3] Federally Enforceable Through Title V Permit
8. The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap, roof overhang, or any other obstruction. [District Rule 4102]
9. The unit shall only be fired on natural gas with sulfur content not to exceed 0.75 gr-S/100 scf. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
10. Emission rates, except during startup, shutdown, initial commissioning and refractory curing, shall not exceed any of the following limits: NO_x: 5 ppmvd @ 3% O₂ or 0.0061 lb-NO_x/MMBtu; PM₁₀: 0.0076 lb-PM₁₀/MMBtu; CO: 25 ppmvd @ 3% O₂ or 0.0185 lb-CO/MMBtu or VOC: 0.003 lb-VOC/MMBtu. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
11. Emission rates during startup, shutdown and refractory curing shall not exceed: particulate matter - 10 pounds per hour, or 0.1 grains/dscf calculated to 12% CO₂; sulfur - 200 pounds of SO₂ per hour, or 2000 ppmv as SO₂, or 0.11 pounds sulfur (as S) per MMBtu on average-wide basis for all units in Rule 4406 plan; NO₂ - 140 pounds per hour or 0.14 pounds per MMBtu. [District Rules 4101, 4102, 4301, 4405, 4406 and 4801] Federally Enforceable Through Title V Permit
12. The initial commissioning period is the time required to complete the necessary safety checks, curing of refractory material and the performance tuning of the burner and attendant systems to achieve compliance with the emission limits required by this permit. The commissioning period begins upon first firing of the unit and shall not extend beyond the first 135 hours of actual burner operation. [District Rule 2201] Federally Enforceable Through Title V Permit
13. The refractory curing period is the time required to gradually increase the firing rate and internal temperature of a unit to thermally temper and set the optimal properties of new refractory material that has been installed as part of a unit's initial commissioning or has been replaced as part of a subsequent maintenance or repair procedure. The refractory curing period following the replacement of material as part of a maintenance or repair procedure shall not exceed 30 hours total of actual burner operation per occurrence. [District Rule 2201] Federally Enforceable Through Title V Permit
14. During the initial commissioning period and any refractory curing period, operator shall limit emissions to the extent possible by optimizing the performance of the low NO_x burner and flue gas recirculation system as can be accommodated by individual initial commissioning and refractory curing activities, by following good work practices and fuel conserving measures and by completing all work in an expeditious manner. Operator shall keep a record of the specific activities undertaken as part of the initial commissioning period and all refractory curing periods and the duration of each activity and shall make the records available for District inspection upon request. [District Rule 2201] Federally Enforceable Through Title V Permit
15. Any of units S-1547-1182 through -1200 may be installed provided that permitted annual emissions do not exceed any of the following limits: NO_x: 49,990 lb/yr; SO_x: 17,210 lb/yr; PM₁₀: 62,282 lb/yr; CO: 151,608 lb/yr or VOC: 24,585 lb/yr, consistent with the quantity of ERCs identified in this project. [District Rules 2201 and 4102] Federally Enforceable Through Title V Permit
16. Annual quantity of natural gas fuel burned in this steam generator shall not exceed 745,000 MMBTU/year. [District Rule 2201] Federally Enforceable Through Title V Permit
17. Duration of start-up and shutdown shall not exceed 2 hours each per occurrence. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
18. Duration of refractory curing shall not exceed 30 hours per each occurrence. Permittee shall keep accurate records of refractory curing duration and make records readily available to the District upon request. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
19. Permittee shall maintain records of duration of each start-up and shutdown, and refractory curing, for a period of five years and make such records readily available for District inspection upon request. [District Rule 4320] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

20. A source test to demonstrate compliance with NO_x and CO emission limits shall be performed within 60 days of startup of this unit. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
21. Source testing to measure natural gas-combustion NO_x and CO emissions from this unit shall be conducted at least once every twelve (12) months (no more than 30 days before or after the required annual source test date). After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months (no more than 30 days before or after the required 36-month source test date). If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
22. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit
23. For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit the test cannot be used to demonstrate compliance with an applicable limit. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
24. The following test methods shall be used: NO_x (ppmv) - EPA Method 7E or ARB Method 100, NO_x (lb/MMBtu) - EPA Method 19; CO (ppmv) - EPA Method 10 or ARB Method 100; Stack gas oxygen (O₂) - EPA Method 3 or 3A or ARB Method 100; stack gas velocities - EPA Method 2; Stack gas moisture content - EPA Method 4; SO_x - EPA Method 6C or 8 or ARB Method 100; fuel gas sulfur as H₂S content - EPA Method 11 or 15; and fuel hhv (MMBtu) - ASTM D 1826 or D 1945 in conjunction with ASTM D 3588. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
25. The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
26. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit
27. The permittee shall monitor and record the stack concentration of NO_x, CO, and O₂ at least once every month (in which a source test is not performed) using a portable analyzer that meets District specifications. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the unit unless monitoring has been performed within the last month. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
28. If the NO_x or CO concentrations corrected to 3%, as measured by the portable analyzer, exceed the allowable emissions limit, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rules 4102, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
29. All NO_x, CO, and O₂ emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. The NO_x, CO, and O₂ analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute sample period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive minute period. [District Rules 4102, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

30. The permittee shall maintain records of: (1) the date and time of NO_x, CO and O₂ measurements, (2) the O₂ concentration in percent by volume and the measured NO_x and CO concentrations corrected to 3% O₂, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
31. All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. Unless otherwise specified in the PTO, no determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0 of District Rule 4320. For the purposes of permittee-performed alternate monitoring, emissions measurements may be performed at any time after the unit reaches conditions representative of normal operation. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
32. Shorter time periods for demonstration of compliance after startup or re-ignition may be approved by the APCO by submittal of appropriate technical justification upon implementation of this ATC. [District Rule 2201] Federally Enforceable Through Title V Permit
33. PUC quality natural gas is any gaseous fuel where the sulfur content is no more than one-fourth (0.25) grain of hydrogen sulfide per one hundred (100) standard cubic feet, no more than five (5) grains of total sulfur per one hundred (100) standard cubic feet, and at least 80% methane by volume. [District Rule 4320] Federally Enforceable Through Title V Permit
34. If the steam generator is not fired on PUC-regulated natural gas and compliance is achieved through fuel sulfur content limitations, then the sulfur content of the fuel shall be determined by testing sulfur content at a location after all fuel sources are combined prior to incineration, or by performing mass balance calculations based on monitoring the sulfur content and volume of each fuel source. The sulfur content of the fuel shall be determined using the test methods referenced in this permit. [District Rule 4320] Federally Enforceable Through Title V Permit
35. When complying with sulfur emission limits by fuel analysis or by a combination of source testing and fuel analysis, permittee shall demonstrate compliance at least annually. [District Rule 4320] Federally Enforceable Through Title V Permit
36. If the unit is fired on PUC-regulated natural gas, valid purchase contracts, supplier certifications, tariff sheets, or transportation contracts may be used to satisfy the fuel sulfur content analysis, provided they establish the fuel sulfur concentration and higher heating value. [District Rule 4320] Federally Enforceable Through Title V Permit
37. All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
38. Prior to operating under this Authority to Construct, permittee shall surrender emission reduction credits for the following quantities of emissions: NO_x: 1,136 lb/quarter; SO_x: 391 lb/quarter; PM₁₀: 1,416 lb/quarter and VOC: 559 lb/quarter. Offset shall be provided at the applicable offset ratio specified in Table 4-2 of Rule 2201 (as amended 9/21/2006). [District Rule 2201] Federally Enforceable Through Title V Permit
39. ERC Certificate Numbers S-796-2, S-2958-2, S-2395-1, S-1337-5 and S-1032-5 (or certificates split from these certificates) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201] Federally Enforceable Through Title V Permit
40. The permittee shall obtain written District approval for the use of any equivalent equipment not specifically approved by this ATC. Approval of the equivalent equipment shall be made in writing and only after the District's determination that the submitted design and performance of the proposed alternative equipment is equivalent to the authorized equipment. [District Rule 2010] Federally Enforceable Through Title V Permit
41. The permittee's request for approval of equivalent equipment shall include the make, model, manufacturer's maximum rating, manufacturer's guaranteed emissions rates, equipment drawing(s) and operational characteristics/parameters. [District Rule 2010] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

42. ATC S-1547-1189-0 shall be canceled upon implementation of this ATC. [District Rule 2201] Federally Enforceable Through Title V Permit



AUTHORITY TO CONSTRUCT

PERMIT NO: S-1547-1190-1

ISSUANCE DATE: 03/29/2013

LEGAL OWNER OR OPERATOR: AERA ENERGY LLC

MAILING ADDRESS: PO BOX 11164
BAKERSFIELD, CA 93389-1164

LOCATION: HEAVY OIL WESTERN STATIONARY SOURCE
KERN COUNTY, CA

EQUIPMENT DESCRIPTION:

MODIFICATION OF 85 MMBTU/HR NATURAL GAS-FIRED STEAM GENERATOR WITH COEN MODEL QLN-ULN ULTRA LOW NOX BURNER, OR NORTH AMERICAN MODEL MAGNA FLAME LEX ULTRA LOW NOX BURNER, OR ADVANCED COMBUSTION TECHNOLOGY GIDEON ULTRA LOW NOX BURNER OR EQUIVALENT, APPROVED TO OPERATE AT VARIOUS SPECIFIED LOCATIONS: REISSUE S-1547-1190-0 WITH AUTHORIZATION FOR INITIAL COMMISSIONING AND REFRACTORY CURING PERIODS

CONDITIONS

1. This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. This unit is approved for operation at the following locations: SE/4 of Section 33 and SE/4 of Section 34, T28S, R21E, and SW/4 of Section 2 and NE/4, NW/4, SW/4 & SE/4 of Section 3, T29S, R21E. [District Rule 4102]
4. Permittee shall notify the District Compliance Division of each location at which the unit is located in excess of 24 hours. Such notification shall be made no later than 48 hours after starting operation at the location. [District Rule 1070] Federally Enforceable Through Title V Permit
5. This unit shall be equipped with a convection section with at least 235 square feet of heat transfer surface area per MMBtu/hr of maximum rated heat input (verified by manufacturer). [Public Resources Code 21000-21177, CEQA]

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (661) 392-5500 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT. This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Seyed Sadredin, Executive Director / APCO

6. This unit shall be equipped with variable frequency drive high efficiency electrical motors driving the blower and water pump. [Public Resources Code 21000-21177, CEQA]
7. Particulate matter emissions shall not exceed 0.1 grain/dscf at operating conditions, nor 0.1 grain/dscf calculated to 12% CO₂, nor 10 lb/hr. [District Rules 4201, 4301, 5.1 and 5.2.3] Federally Enforceable Through Title V Permit
8. The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap, roof overhang, or any other obstruction. [District Rule 4102]
9. The unit shall only be fired on natural gas with sulfur content not to exceed 0.75 gr-S/100 scf. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
10. Emission rates, except during startup, shutdown, initial commissioning and refractory curing, shall not exceed any of the following limits: NO_x: 5 ppmvd @ 3% O₂ or 0.0061 lb-NO_x/MMBtu; PM₁₀: 0.0076 lb-PM₁₀/MMBtu; CO: 25 ppmvd @ 3% O₂ or 0.0185 lb-CO/MMBtu or VOC: 0.003 lb-VOC/MMBtu. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
11. Emission rates during startup, shutdown and refractory curing shall not exceed: particulate matter - 10 pounds per hour, or 0.1 grains/dscf calculated to 12% CO₂; sulfur - 200 pounds of SO₂ per hour, or 2000 ppmv as SO₂, or 0.11 pounds sulfur (as S) per MMBtu on average-wide basis for all units in Rule 4406 plan; NO₂ - 140 pounds per hour or 0.14 pounds per MMBtu. [District Rules 4101, 4102, 4301, 4405, 4406 and 4801] Federally Enforceable Through Title V Permit
12. The initial commissioning period is the time required to complete the necessary safety checks, curing of refractory material and the performance tuning of the burner and attendant systems to achieve compliance with the emission limits required by this permit. The commissioning period begins upon first firing of the unit and shall not extend beyond the first 135 hours of actual burner operation. [District Rule 2201] Federally Enforceable Through Title V Permit
13. The refractory curing period is the time required to gradually increase the firing rate and internal temperature of a unit to thermally temper and set the optimal properties of new refractory material that has been installed as part of a unit's initial commissioning or has been replaced as part of a subsequent maintenance or repair procedure. The refractory curing period following the replacement of material as part of a maintenance or repair procedure shall not exceed 30 hours total of actual burner operation per occurrence. [District Rule 2201] Federally Enforceable Through Title V Permit
14. During the initial commissioning period and any refractory curing period, operator shall limit emissions to the extent possible by optimizing the performance of the low NO_x burner and flue gas recirculation system as can be accommodated by individual initial commissioning and refractory curing activities, by following good work practices and fuel conserving measures and by completing all work in an expeditious manner. Operator shall keep a record of the specific activities undertaken as part of the initial commissioning period and all refractory curing periods and the duration of each activity and shall make the records available for District inspection upon request. [District Rule 2201] Federally Enforceable Through Title V Permit
15. Any of units S-1547-1182 through -1200 may be installed provided that permitted annual emissions do not exceed any of the following limits: NO_x: 49,990 lb/yr; SO_x: 17,210 lb/yr; PM₁₀: 62,282 lb/yr; CO: 151,608 lb/yr or VOC: 24,585 lb/yr, consistent with the quantity of ERCs identified in this project. [District Rules 2201 and 4102] Federally Enforceable Through Title V Permit
16. Annual quantity of natural gas fuel burned in this steam generator shall not exceed 745,000 MMBTU/year. [District Rule 2201] Federally Enforceable Through Title V Permit
17. Duration of start-up and shutdown shall not exceed 2 hours each per occurrence. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
18. Duration of refractory curing shall not exceed 30 hours per each occurrence. Permittee shall keep accurate records of refractory curing duration and make records readily available to the District upon request. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
19. Permittee shall maintain records of duration of each start-up and shutdown, and refractory curing, for a period of five years and make such records readily available for District inspection upon request. [District Rule 4320] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

20. A source test to demonstrate compliance with NO_x and CO emission limits shall be performed within 60 days of startup of this unit. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
21. Source testing to measure natural gas-combustion NO_x and CO emissions from this unit shall be conducted at least once every twelve (12) months (no more than 30 days before or after the required annual source test date). After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months (no more than 30 days before or after the required 36-month source test date). If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
22. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit
23. For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit the test cannot be used to demonstrate compliance with an applicable limit. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
24. The following test methods shall be used: NO_x (ppmv) - EPA Method 7E or ARB Method 100, NO_x (lb/MMBtu) - EPA Method 19; CO (ppmv) - EPA Method 10 or ARB Method 100; Stack gas oxygen (O₂) - EPA Method 3 or 3A or ARB Method 100; stack gas velocities - EPA Method 2; Stack gas moisture content - EPA Method 4; SO_x - EPA Method 6C or 8 or ARB Method 100; fuel gas sulfur as H₂S content - EPA Method 11 or 15; and fuel hhv (MMBtu) - ASTM D 1826 or D 1945 in conjunction with ASTM D 3588. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
25. The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
26. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit
27. The permittee shall monitor and record the stack concentration of NO_x, CO, and O₂ at least once every month (in which a source test is not performed) using a portable analyzer that meets District specifications. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the unit unless monitoring has been performed within the last month. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
28. If the NO_x or CO concentrations corrected to 3%, as measured by the portable analyzer, exceed the allowable emissions limit, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rules 4102, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
29. All NO_x, CO, and O₂ emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. The NO_x, CO, and O₂ analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute sample period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive minute period. [District Rules 4102, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

30. The permittee shall maintain records of: (1) the date and time of NO_x, CO and O₂ measurements, (2) the O₂ concentration in percent by volume and the measured NO_x and CO concentrations corrected to 3% O₂, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
31. All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. Unless otherwise specified in the PTO, no determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0 of District Rule 4320. For the purposes of permittee-performed alternate monitoring, emissions measurements may be performed at any time after the unit reaches conditions representative of normal operation. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
32. Shorter time periods for demonstration of compliance after startup or re-ignition may be approved by the APCO by submittal of appropriate technical justification upon implementation of this ATC. [District Rule 2201] Federally Enforceable Through Title V Permit
33. PUC quality natural gas is any gaseous fuel where the sulfur content is no more than one-fourth (0.25) grain of hydrogen sulfide per one hundred (100) standard cubic feet, no more than five (5) grains of total sulfur per one hundred (100) standard cubic feet, and at least 80% methane by volume. [District Rule 4320] Federally Enforceable Through Title V Permit
34. If the steam generator is not fired on PUC-regulated natural gas and compliance is achieved through fuel sulfur content limitations, then the sulfur content of the fuel shall be determined by testing sulfur content at a location after all fuel sources are combined prior to incineration, or by performing mass balance calculations based on monitoring the sulfur content and volume of each fuel source. The sulfur content of the fuel shall be determined using the test methods referenced in this permit. [District Rule 4320] Federally Enforceable Through Title V Permit
35. When complying with sulfur emission limits by fuel analysis or by a combination of source testing and fuel analysis, permittee shall demonstrate compliance at least annually. [District Rule 4320] Federally Enforceable Through Title V Permit
36. If the unit is fired on PUC-regulated natural gas, valid purchase contracts, supplier certifications, tariff sheets, or transportation contracts may be used to satisfy the fuel sulfur content analysis, provided they establish the fuel sulfur concentration and higher heating value. [District Rule 4320] Federally Enforceable Through Title V Permit
37. All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
38. Prior to operating under this Authority to Construct, permittee shall surrender emission reduction credits for the following quantities of emissions: NO_x: 1,136 lb/quarter; SO_x: 391 lb/quarter; PM₁₀: 1,416 lb/quarter and VOC: 559 lb/quarter. Offset shall be provided at the applicable offset ratio specified in Table 4-2 of Rule 2201 (as amended 9/21/2006). [District Rule 2201] Federally Enforceable Through Title V Permit
39. ERC Certificate Numbers S-796-2, S-2958-2, S-2395-1, S-1337-5 and S-1032-5 (or certificates split from these certificates) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201] Federally Enforceable Through Title V Permit
40. The permittee shall obtain written District approval for the use of any equivalent equipment not specifically approved by this ATC. Approval of the equivalent equipment shall be made in writing and only after the District's determination that the submitted design and performance of the proposed alternative equipment is equivalent to the authorized equipment. [District Rule 2010] Federally Enforceable Through Title V Permit
41. The permittee's request for approval of equivalent equipment shall include the make, model, manufacturer's maximum rating, manufacturer's guaranteed emissions rates, equipment drawing(s) and operational characteristics/parameters. [District Rule 2010] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

42. ATC S-1547-1190-0 shall be canceled upon implementation of this ATC. [District Rule 2201] Federally Enforceable Through Title V Permit



AUTHORITY TO CONSTRUCT

PERMIT NO: S-1547-1191-1

ISSUANCE DATE: 03/29/2013

LEGAL OWNER OR OPERATOR: AERA ENERGY LLC
MAILING ADDRESS: PO BOX 11164
BAKERSFIELD, CA 93389-1164

LOCATION: HEAVY OIL WESTERN STATIONARY SOURCE
KERN COUNTY, CA

EQUIPMENT DESCRIPTION:

MODIFICATION OF 85 MMBTU/HR NATURAL GAS-FIRED STEAM GENERATOR WITH COEN MODEL QLN-ULN ULTRA LOW NOX BURNER, OR NORTH AMERICAN MODEL MAGNA FLAME LEX ULTRA LOW NOX BURNER, OR ADVANCED COMBUSTION TECHNOLOGY GIDEON ULTRA LOW NOX BURNER OR EQUIVALENT, APPROVED TO OPERATE AT VARIOUS SPECIFIED LOCATIONS: REISSUE S-1547-1191-0 WITH AUTHORIZATION FOR INITIAL COMMISSIONING AND REFRACTORY CURING PERIODS

CONDITIONS

1. This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. This unit is approved for operation at the following locations: SE/4 of Section 33 and SE/4 of Section 34, T28S, R21E, and SW/4 of Section 2 and NE/4, NW/4, SW/4 & SE/4 of Section 3, T29S, R21E. [District Rule 4102]
4. Permittee shall notify the District Compliance Division of each location at which the unit is located in excess of 24 hours. Such notification shall be made no later than 48 hours after starting operation at the location. [District Rule 1070] Federally Enforceable Through Title V Permit
5. This unit shall be equipped with a convection section with at least 235 square feet of heat transfer surface area per MMBtu/hr of maximum rated heat input (verified by manufacturer). [Public Resources Code 21000-21177, CEQA]

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (661) 392-5500 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT. This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Seyed Sadredin, Executive Director / APCO

6. This unit shall be equipped with variable frequency drive high efficiency electrical motors driving the blower and water pump. [Public Resources Code 21000-21177, CEQA]
7. The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap, roof overhang, or any other obstruction. [District Rule 4102]
8. The unit shall only be fired on natural gas with sulfur content not to exceed 0.75 gr-S/100 scf. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
9. Emission rates, except during startup, shutdown, initial commissioning and refractory curing, shall not exceed any of the following limits: NOx: 5 ppmvd @ 3% O₂ or 0.0061 lb-NOx/MMBtu; PM10: 0.0076 lb-PM10/MMBtu; CO: 25 ppmvd @ 3% O₂ or 0.0185 lb-CO/MMBtu or VOC: 0.003 lb-VOC/MMBtu. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
10. Emission rates during startup, shutdown and refractory curing shall not exceed: particulate matter - 10 pounds per hour, or 0.1 grains/dscf calculated to 12% CO₂; sulfur - 200 pounds of SO₂ per hour, or 2000 ppmv as SO₂, or 0.11 pounds sulfur (as S) per MMBtu on average-wide basis for all units in Rule 4406 plan; NO₂ - 140 pounds per hour or 0.14 pounds per MMBtu. [District Rules 4101, 4102, 4301, 4405, 4406 and 4801] Federally Enforceable Through Title V Permit
11. The initial commissioning period is the time required to complete the necessary safety checks, curing of refractory material and the performance tuning of the burner and attendant systems to achieve compliance with the emission limits required by this permit. The commissioning period begins upon first firing of the unit and shall not extend beyond the first 135 hours of actual burner operation. [District Rule 2201] Federally Enforceable Through Title V Permit
12. The refractory curing period is the time required to gradually increase the firing rate and internal temperature of a unit to thermally temper and set the optimal properties of new refractory material that has been installed as part of a unit's initial commissioning or has been replaced as part of a subsequent maintenance or repair procedure. The refractory curing period following the replacement of material as part of a maintenance or repair procedure shall not exceed 30 hours total of actual burner operation per occurrence. [District Rule 2201] Federally Enforceable Through Title V Permit
13. During the initial commissioning period and any refractory curing period, operator shall limit emissions to the extent possible by optimizing the performance of the low NOx burner and flue gas recirculation system as can be accommodated by individual initial commissioning and refractory curing activities, by following good work practices and fuel conserving measures and by completing all work in an expeditious manner. Operator shall keep a record of the specific activities undertaken as part of the initial commissioning period and all refractory curing periods and the duration of each activity and shall make the records available for District inspection upon request. [District Rule 2201] Federally Enforceable Through Title V Permit
14. Any of units S-1547-1182 through -1200 may be installed provided that permitted annual emissions do not exceed any of the following limits: NOx: 49,990 lb/yr; SOx: 17,210 lb/yr; PM10: 62,282 lb/yr; CO: 151,608 lb/yr or VOC: 24,585 lb/yr, consistent with the quantity of ERCs identified in this project. [District Rules 2201 and 4102] Federally Enforceable Through Title V Permit
15. Annual quantity of natural gas fuel burned in this steam generator shall not exceed 745,000 MMBTU/year. [District Rule 2201] Federally Enforceable Through Title V Permit
16. Duration of start-up and shutdown shall not exceed 2 hours each per occurrence. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
17. Duration of refractory curing shall not exceed 30 hours per each occurrence. Permittee shall keep accurate records of refractory curing duration and make records readily available to the District upon request. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
18. Permittee shall maintain records of duration of each start-up and shutdown, and refractory curing, for a period of five years and make such records readily available for District inspection upon request. [District Rule 4320] Federally Enforceable Through Title V Permit
19. A source test to demonstrate compliance with NOx and CO emission limits shall be performed within 60 days of startup of this unit. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

20. A source test to demonstrate compliance with NO_x and CO emission limits shall be performed within 60 days of startup of this unit. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
21. Source testing to measure natural gas-combustion NO_x and CO emissions from this unit shall be conducted at least once every twelve (12) months (no more than 30 days before or after the required annual source test date). After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months (no more than 30 days before or after the required 36-month source test date). If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
22. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit
23. For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit the test cannot be used to demonstrate compliance with an applicable limit. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
24. The following test methods shall be used: NO_x (ppmv) - EPA Method 7E or ARB Method 100, NO_x (lb/MMBtu) - EPA Method 19; CO (ppmv) - EPA Method 10 or ARB Method 100; Stack gas oxygen (O₂) - EPA Method 3 or 3A or ARB Method 100; stack gas velocities - EPA Method 2; Stack gas moisture content - EPA Method 4; SO_x - EPA Method 6C or 8 or ARB Method 100; fuel gas sulfur as H₂S content - EPA Method 11 or 15; and fuel hhv (MMBtu) - ASTM D 1826 or D 1945 in conjunction with ASTM D 3588. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
25. The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
26. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit
27. The permittee shall monitor and record the stack concentration of NO_x, CO, and O₂ at least once every month (in which a source test is not performed) using a portable analyzer that meets District specifications. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the unit unless monitoring has been performed within the last month. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
28. If the NO_x or CO concentrations corrected to 3%, as measured by the portable analyzer, exceed the allowable emissions limit, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rules 4102, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
29. All NO_x, CO, and O₂ emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. The NO_x, CO, and O₂ analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute sample period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive minute period. [District Rules 4102, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

30. The permittee shall maintain records of: (1) the date and time of NO_x, CO and O₂ measurements, (2) the O₂ concentration in percent by volume and the measured NO_x and CO concentrations corrected to 3% O₂, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
31. All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. Unless otherwise specified in the PTO, no determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0 of District Rule 4320. For the purposes of permittee-performed alternate monitoring, emissions measurements may be performed at any time after the unit reaches conditions representative of normal operation. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
32. Shorter time periods for demonstration of compliance after startup or re-ignition may be approved by the APCO by submittal of appropriate technical justification upon implementation of this ATC. [District Rule 2201] Federally Enforceable Through Title V Permit
33. PUC quality natural gas is any gaseous fuel where the sulfur content is no more than one-fourth (0.25) grain of hydrogen sulfide per one hundred (100) standard cubic feet, no more than five (5) grains of total sulfur per one hundred (100) standard cubic feet, and at least 80% methane by volume. [District Rule 4320] Federally Enforceable Through Title V Permit
34. If the steam generator is not fired on PUC-regulated natural gas and compliance is achieved through fuel sulfur content limitations, then the sulfur content of the fuel shall be determined by testing sulfur content at a location after all fuel sources are combined prior to incineration, or by performing mass balance calculations based on monitoring the sulfur content and volume of each fuel source. The sulfur content of the fuel shall be determined using the test methods referenced in this permit. [District Rule 4320] Federally Enforceable Through Title V Permit
35. When complying with sulfur emission limits by fuel analysis or by a combination of source testing and fuel analysis, permittee shall demonstrate compliance at least annually. [District Rule 4320] Federally Enforceable Through Title V Permit
36. If the unit is fired on PUC-regulated natural gas, valid purchase contracts, supplier certifications, tariff sheets, or transportation contracts may be used to satisfy the fuel sulfur content analysis, provided they establish the fuel sulfur concentration and higher heating value. [District Rule 4320] Federally Enforceable Through Title V Permit
37. All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
38. Prior to operating under this Authority to Construct, permittee shall surrender emission reduction credits for the following quantities of emissions: NO_x: 1,136 lb/quarter; SO_x: 391 lb/quarter; PM₁₀: 1,416 lb/quarter and VOC: 559 lb/quarter. Offset shall be provided at the applicable offset ratio specified in Table 4-2 of Rule 2201 (as amended 9/21/2006). [District Rule 2201] Federally Enforceable Through Title V Permit
39. ERC Certificate Numbers S-796-2, S-2958-2, S-2395-1, S-1337-5 and S-1032-5 (or certificates split from these certificates) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201] Federally Enforceable Through Title V Permit
40. The permittee shall obtain written District approval for the use of any equivalent equipment not specifically approved by this ATC. Approval of the equivalent equipment shall be made in writing and only after the District's determination that the submitted design and performance of the proposed alternative equipment is equivalent to the authorized equipment. [District Rule 2010] Federally Enforceable Through Title V Permit
41. The permittee's request for approval of equivalent equipment shall include the make, model, manufacturer's maximum rating, manufacturer's guaranteed emissions rates, equipment drawing(s) and operational characteristics/parameters. [District Rule 2010] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

42. ATC S-1547-1191-0 shall be canceled upon implementation of this ATC. [District Rule 2201] Federally Enforceable Through Title V Permit



AUTHORITY TO CONSTRUCT

PERMIT NO: S-1547-1192-1

ISSUANCE DATE: 03/29/2013

LEGAL OWNER OR OPERATOR: AERA ENERGY LLC
MAILING ADDRESS: PO BOX 11164
BAKERSFIELD, CA 93389-1164

LOCATION: HEAVY OIL WESTERN STATIONARY SOURCE
KERN COUNTY, CA

EQUIPMENT DESCRIPTION:

MODIFICATION OF 85 MMBTU/HR NATURAL GAS-FIRED STEAM GENERATOR WITH COEN MODEL QLN-ULN ULTRA LOW NOX BURNER, OR NORTH AMERICAN MODEL MAGNA FLAME LEX ULTRA LOW NOX BURNER, OR ADVANCED COMBUSTION TECHNOLOGY GIDEON ULTRA LOW NOX BURNER OR EQUIVALENT, APPROVED TO OPERATE AT VARIOUS SPECIFIED LOCATIONS: REISSUE S-1547-1192-0 WITH AUTHORIZATION FOR INITIAL COMMISSIONING AND REFRACTORY CURING PERIODS

CONDITIONS

1. This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. This unit is approved for operation at the following locations: SE/4 of Section 33 and SE/4 of Section 34, T28S, R21E, and SW/4 of Section 2 and NE/4, NW/4, SW/4 & SE/4 of Section 3, T29S, R21E. [District Rule 4102]
4. Permittee shall notify the District Compliance Division of each location at which the unit is located in excess of 24 hours. Such notification shall be made no later than 48 hours after starting operation at the location. [District Rule 1070] Federally Enforceable Through Title V Permit
5. This unit shall be equipped with a convection section with at least 235 square feet of heat transfer surface area per MMBtu/hr of maximum rated heat input (verified by manufacturer). [Public Resources Code 21000-21177, CEQA]

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (661) 392-5500 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT. This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Sayed Sadredin, Executive Director / APCO

6. This unit shall be equipped with variable frequency drive high efficiency electrical motors driving the blower and water pump. [Public Resources Code 21000-21177, CEQA]
7. Particulate matter emissions shall not exceed 0.1 grain/dscf at operating conditions, nor 0.1 grain/dscf calculated to 12% CO₂, nor 10 lb/hr. [District Rules 4201, 4301, 5.1 and 5.2.3] Federally Enforceable Through Title V Permit
8. The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap, roof overhang, or any other obstruction. [District Rule 4102]
9. The unit shall only be fired on natural gas with sulfur content not to exceed 0.75 gr-S/100 scf. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
10. Emission rates, except during startup, shutdown, initial commissioning and refractory curing, shall not exceed any of the following limits: NO_x: 5 ppmvd @ 3% O₂ or 0.0061 lb-NO_x/MMBtu; PM₁₀: 0.0076 lb-PM₁₀/MMBtu; CO: 25 ppmvd @ 3% O₂ or 0.0185 lb-CO/MMBtu or VOC: 0.003 lb-VOC/MMBtu. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
11. Emission rates during startup, shutdown and refractory curing shall not exceed: particulate matter - 10 pounds per hour, or 0.1 grains/dscf calculated to 12% CO₂; sulfur - 200 pounds of SO₂ per hour, or 2000 ppmv as SO₂, or 0.11 pounds sulfur (as S) per MMBtu on average-wide basis for all units in Rule 4406 plan; NO₂ - 140 pounds per hour or 0.14 pounds per MMBtu. [District Rules 4101, 4102, 4301, 4405, 4406 and 4801] Federally Enforceable Through Title V Permit
12. The initial commissioning period is the time required to complete the necessary safety checks, curing of refractory material and the performance tuning of the burner and attendant systems to achieve compliance with the emission limits required by this permit. The commissioning period begins upon first firing of the unit and shall not extend beyond the first 135 hours of actual burner operation. [District Rule 2201] Federally Enforceable Through Title V Permit
13. The refractory curing period is the time required to gradually increase the firing rate and internal temperature of a unit to thermally temper and set the optimal properties of new refractory material that has been installed as part of a unit's initial commissioning or has been replaced as part of a subsequent maintenance or repair procedure. The refractory curing period following the replacement of material as part of a maintenance or repair procedure shall not exceed 30 hours total of actual burner operation per occurrence. [District Rule 2201] Federally Enforceable Through Title V Permit
14. During the initial commissioning period and any refractory curing period, operator shall limit emissions to the extent possible by optimizing the performance of the low NO_x burner and flue gas recirculation system as can be accommodated by individual initial commissioning and refractory curing activities, by following good work practices and fuel conserving measures and by completing all work in an expeditious manner. Operator shall keep a record of the specific activities undertaken as part of the initial commissioning period and all refractory curing periods and the duration of each activity and shall make the records available for District inspection upon request. [District Rule 2201] Federally Enforceable Through Title V Permit
15. Any of units S-1547-1182 through -1200 may be installed provided that permitted annual emissions do not exceed any of the following limits: NO_x: 49,990 lb/yr; SO_x: 17,210 lb/yr; PM₁₀: 62,282 lb/yr; CO: 151,608 lb/yr or VOC: 24,585 lb/yr, consistent with the quantity of ERCs identified in this project. [District Rules 2201 and 4102] Federally Enforceable Through Title V Permit
16. Annual quantity of natural gas fuel burned in this steam generator shall not exceed 745,000 MMBTU/year. [District Rule 2201] Federally Enforceable Through Title V Permit
17. Duration of start-up and shutdown shall not exceed 2 hours each per occurrence. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
18. Duration of refractory curing shall not exceed 30 hours per each occurrence. Permittee shall keep accurate records of refractory curing duration and make records readily available to the District upon request. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
19. Permittee shall maintain records of duration of each start-up and shutdown, and refractory curing, for a period of five years and make such records readily available for District inspection upon request. [District Rule 4320] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

20. A source test to demonstrate compliance with NO_x and CO emission limits shall be performed within 60 days of startup of this unit. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
21. Source testing to measure natural gas-combustion NO_x and CO emissions from this unit shall be conducted at least once every twelve (12) months (no more than 30 days before or after the required annual source test date). After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months (no more than 30 days before or after the required 36-month source test date). If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
22. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit
23. For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit the test cannot be used to demonstrate compliance with an applicable limit. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
24. The following test methods shall be used: NO_x (ppmv) - EPA Method 7E or ARB Method 100, NO_x (lb/MMBtu) - EPA Method 19; CO (ppmv) - EPA Method 10 or ARB Method 100; Stack gas oxygen (O₂) - EPA Method 3 or 3A or ARB Method 100; stack gas velocities - EPA Method 2; Stack gas moisture content - EPA Method 4; SO_x - EPA Method 6C or 8 or ARB Method 100; fuel gas sulfur as H₂S content - EPA Method 11 or 15; and fuel hhv (MMBtu) - ASTM D 1826 or D 1945 in conjunction with ASTM D 3588. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
25. The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
26. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit
27. The permittee shall monitor and record the stack concentration of NO_x, CO, and O₂ at least once every month (in which a source test is not performed) using a portable analyzer that meets District specifications. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the unit unless monitoring has been performed within the last month. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
28. If the NO_x or CO concentrations corrected to 3%, as measured by the portable analyzer, exceed the allowable emissions limit, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rules 4102, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
29. All NO_x, CO, and O₂ emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. The NO_x, CO, and O₂ analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute sample period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive minute period. [District Rules 4102, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

30. The permittee shall maintain records of: (1) the date and time of NO_x, CO and O₂ measurements, (2) the O₂ concentration in percent by volume and the measured NO_x and CO concentrations corrected to 3% O₂, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
31. All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. Unless otherwise specified in the PTO, no determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0 of District Rule 4320. For the purposes of permittee-performed alternate monitoring, emissions measurements may be performed at any time after the unit reaches conditions representative of normal operation. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
32. Shorter time periods for demonstration of compliance after startup or re-ignition may be approved by the APCO by submittal of appropriate technical justification upon implementation of this ATC. [District Rule 2201] Federally Enforceable Through Title V Permit
33. PUC quality natural gas is any gaseous fuel where the sulfur content is no more than one-fourth (0.25) grain of hydrogen sulfide per one hundred (100) standard cubic feet, no more than five (5) grains of total sulfur per one hundred (100) standard cubic feet, and at least 80% methane by volume. [District Rule 4320] Federally Enforceable Through Title V Permit
34. If the steam generator is not fired on PUC-regulated natural gas and compliance is achieved through fuel sulfur content limitations, then the sulfur content of the fuel shall be determined by testing sulfur content at a location after all fuel sources are combined prior to incineration, or by performing mass balance calculations based on monitoring the sulfur content and volume of each fuel source. The sulfur content of the fuel shall be determined using the test methods referenced in this permit. [District Rule 4320] Federally Enforceable Through Title V Permit
35. When complying with sulfur emission limits by fuel analysis or by a combination of source testing and fuel analysis, permittee shall demonstrate compliance at least annually. [District Rule 4320] Federally Enforceable Through Title V Permit
36. If the unit is fired on PUC-regulated natural gas, valid purchase contracts, supplier certifications, tariff sheets, or transportation contracts may be used to satisfy the fuel sulfur content analysis, provided they establish the fuel sulfur concentration and higher heating value. [District Rule 4320] Federally Enforceable Through Title V Permit
37. All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
38. Prior to operating under this Authority to Construct, permittee shall surrender emission reduction credits for the following quantities of emissions: NO_x: 1,136 lb/quarter; SO_x: 391 lb/quarter; PM₁₀: 1,416 lb/quarter and VOC: 559 lb/quarter. Offset shall be provided at the applicable offset ratio specified in Table 4-2 of Rule 2201 (as amended 9/21/2006). [District Rule 2201] Federally Enforceable Through Title V Permit
39. ERC Certificate Numbers S-796-2, S-2958-2, S-2395-1, S-1337-5 and S-1032-5 (or certificates split from these certificates) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201] Federally Enforceable Through Title V Permit
40. The permittee shall obtain written District approval for the use of any equivalent equipment not specifically approved by this ATC. Approval of the equivalent equipment shall be made in writing and only after the District's determination that the submitted design and performance of the proposed alternative equipment is equivalent to the authorized equipment. [District Rule 2010] Federally Enforceable Through Title V Permit
41. The permittee's request for approval of equivalent equipment shall include the make, model, manufacturer's maximum rating, manufacturer's guaranteed emissions rates, equipment drawing(s) and operational characteristics/parameters. [District Rule 2010] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

42. ATC S-1547-1192-0 shall be canceled upon implementation of this ATC. [District Rule 2201] Federally Enforceable Through Title V Permit



AUTHORITY TO CONSTRUCT

PERMIT NO: S-1547-1193-1

ISSUANCE DATE: 03/29/2013

LEGAL OWNER OR OPERATOR: AERA ENERGY LLC
MAILING ADDRESS: PO BOX 11164
BAKERSFIELD, CA 93389-1164

LOCATION: HEAVY OIL WESTERN STATIONARY SOURCE
KERN COUNTY, CA

EQUIPMENT DESCRIPTION:

MODIFICATION OF 85 MMBTU/HR NATURAL GAS-FIRED STEAM GENERATOR WITH COEN MODEL QLN-ULN ULTRA LOW NOX BURNER, OR NORTH AMERICAN MODEL MAGNA FLAME LEX ULTRA LOW NOX BURNER, OR ADVANCED COMBUSTION TECHNOLOGY GIDEON ULTRA LOW NOX BURNER OR EQUIVALENT, APPROVED TO OPERATE AT VARIOUS SPECIFIED LOCATIONS: REISSUE S-1547-1193-0 WITH AUTHORIZATION FOR INITIAL COMMISSIONING AND REFRACTORY CURING PERIODS

CONDITIONS

1. This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. This unit is approved for operation at the following locations: SE/4 of Section 33 and SE/4 of Section 34 of T28S, R21E; and SW/4 of Section 2 and NE/4, NW/4, SE/4 and SW/4 of Section 3, T29S, R21E. [District Rule 4102]
4. Permittee shall notify the District Compliance Division of each location at which the unit is located in excess of 24 hours. Such notification shall be made no later than 48 hours after starting operation at the location. [District Rule 1070] Federally Enforceable Through Title V Permit
5. This unit shall be equipped with a convection section with at least 235 square feet of heat transfer surface area per MMBtu/hr of maximum rated heat input (verified by manufacturer). [Public Resources Code 21000-21177, CEQA]

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (661) 392-5500 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT. This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Seyed Sadredin, Executive Director / APCO

6. This unit shall be equipped with variable frequency drive high efficiency electrical motors driving the blower and water pump. [Public Resources Code 21000-21177, CEQA]
7. Particulate matter emissions shall not exceed 0.1 grain/dscf at operating conditions, nor 0.1 grain/dscf calculated to 12% CO₂, nor 10 lb/hr. [District Rules 4201, 4301, 5.1 and 5.2.3] Federally Enforceable Through Title V Permit
8. The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap, roof overhang, or any other obstruction. [District Rule 4102]
9. The unit shall only be fired on natural gas with sulfur content not to exceed 0.75 gr-S/100 scf. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
10. Emission rates, except during startup, shutdown, initial commissioning and refractory curing, shall not exceed any of the following limits: NO_x: 7 ppmvd @ 3% O₂ or 0.008 lb-NO_x/MMBtu; PM₁₀: 0.0076 lb-PM₁₀/MMBtu; CO: 25 ppmvd @ 3% O₂ or 0.0185 lb-CO/MMBtu or VOC: 0.003 lb-VOC/MMBtu. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
11. Emission rates during startup, shutdown and refractory curing shall not exceed: particulate matter - 10 pounds per hour, or 0.1 grains/dscf calculated to 12% CO₂; sulfur - 200 pounds of SO₂ per hour, or 2000 ppmv as SO₂, or 0.11 pounds sulfur (as S) per MMBtu on average-wide basis for all units in Rule 4406 plan; NO₂ - 140 pounds per hour or 0.14 pounds per MMBtu. [District Rules 4101, 4102, 4301, 4405, 4406 and 4801] Federally Enforceable Through Title V Permit
12. The initial commissioning period is the time required to complete the necessary safety checks, curing of refractory material and the performance tuning of the burner and attendant systems to achieve compliance with the emission limits required by this permit. The commissioning period begins upon first firing of the unit and shall not extend beyond the first 135 hours of actual burner operation. [District Rule 2201] Federally Enforceable Through Title V Permit
13. The refractory curing period is the time required to gradually increase the firing rate and internal temperature of a unit to thermally temper and set the optimal properties of new refractory material that has been installed as part of a unit's initial commissioning or has been replaced as part of a subsequent maintenance or repair procedure. The refractory curing period following the replacement of material as part of a maintenance or repair procedure shall not exceed 30 hours total of actual burner operation per occurrence. [District Rule 2201] Federally Enforceable Through Title V Permit
14. During the initial commissioning period and any refractory curing period, operator shall limit emissions to the extent possible by optimizing the performance of the low NO_x burner and flue gas recirculation system as can be accommodated by individual initial commissioning and refractory curing activities, by following good work practices and fuel conserving measures and by completing all work in an expeditious manner. Operator shall keep a record of the specific activities undertaken as part of the initial commissioning period and all refractory curing periods and the duration of each activity and shall make the records available for District inspection upon request. [District Rule 2201] Federally Enforceable Through Title V Permit
15. Any of units S-1547-1182 through -1280 may be installed provided that permitted annual emissions do not exceed any of the following limits: NO_x: 49,990 lb/yr; SO_x: 17,210 lb/yr; PM₁₀: 62,282 lb/yr; CO: 151,608 lb/yr or VOC: 24,585 lb/yr, consistent with the quantity of ERCs identified in this project. [District Rules 2201 and 4102] Federally Enforceable Through Title V Permit
16. Annual quantity of natural gas fuel burned in this steam generator shall not exceed 730,000 MMBTU/year. [District Rule 2201] Federally Enforceable Through Title V Permit
17. Duration of start-up and shutdown shall not exceed 2 hours each per occurrence. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
18. Duration of refractory curing shall not exceed 30 hours per each occurrence. Permittee shall keep accurate records of refractory curing duration and make records readily available to the District upon request. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
19. Permittee shall maintain records of duration of each start-up and shutdown, and refractory curing, for a period of five years and make such records readily available for District inspection upon request. [District Rule 4320] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

20. A source test to demonstrate compliance with NO_x and CO emission limits shall be performed within 60 days of startup of this unit. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
21. Source testing to measure natural gas-combustion NO_x and CO emissions from this unit shall be conducted at least once every twelve (12) months (no more than 30 days before or after the required annual source test date). After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months (no more than 30 days before or after the required 36-month source test date). If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
22. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit
23. For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit the test cannot be used to demonstrate compliance with an applicable limit. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
24. The following test methods shall be used: NO_x (ppmv) - EPA Method 7E or ARB Method 100, NO_x (lb/MMBtu) - EPA Method 19; CO (ppmv) - EPA Method 10 or ARB Method 100; Stack gas oxygen (O₂) - EPA Method 3 or 3A or ARB Method 100; stack gas velocities - EPA Method 2; Stack gas moisture content - EPA Method 4; SO_x - EPA Method 6C or 8 or ARB Method 100; fuel gas sulfur as H₂S content - EPA Method 11 or 15; and fuel hhv (MMBtu) - ASTM D 1826 or D 1945 in conjunction with ASTM D 3588. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
25. The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
26. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit
27. The permittee shall monitor and record the stack concentration of NO_x, CO, and O₂ at least once every month (in which a source test is not performed) using a portable analyzer that meets District specifications. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the unit unless monitoring has been performed within the last month. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
28. If the NO_x or CO concentrations corrected to 3%, as measured by the portable analyzer, exceed the applicable emission limit, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rules 4102, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
29. All NO_x, CO, and O₂ emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. The NO_x, CO, and O₂ analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute sample period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive minute period. [District Rules 4102, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

30. The permittee shall maintain records of: (1) the date and time of NO_x, CO and O₂ measurements, (2) the O₂ concentration in percent by volume and the measured NO_x and CO concentrations corrected to 3% O₂, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
31. All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. Unless otherwise specified in the PTO, no determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0 of District Rule 4320. For the purposes of permittee-performed alternate monitoring, emissions measurements may be performed at any time after the unit reaches conditions representative of normal operation. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
32. Shorter time periods for demonstration of compliance after startup or re-ignition may be approved by the APCO by submittal of appropriate technical justification upon implementation of this ATC. [District Rule 2201] Federally Enforceable Through Title V Permit
33. PUC quality natural gas is any gaseous fuel where the sulfur content is no more than one-fourth (0.25) grain of hydrogen sulfide per one hundred (100) standard cubic feet, no more than five (5) grains of total sulfur per one hundred (100) standard cubic feet, and at least 80% methane by volume. [District Rule 4320] Federally Enforceable Through Title V Permit
34. If the steam generator is not fired on PUC-regulated natural gas and compliance is achieved through fuel sulfur content limitations, then the sulfur content of the fuel shall be determined by testing sulfur content at a location after all fuel sources are combined prior to incineration, or by performing mass balance calculations based on monitoring the sulfur content and volume of each fuel source. The sulfur content of the fuel shall be determined using the test methods referenced in this permit. [District Rule 4320] Federally Enforceable Through Title V Permit
35. When complying with sulfur emission limits by fuel analysis or by a combination of source testing and fuel analysis, permittee shall demonstrate compliance at least annually. [District Rule 4320] Federally Enforceable Through Title V Permit
36. If the unit is fired on PUC-regulated natural gas, valid purchase contracts, supplier certifications, tariff sheets, or transportation contracts may be used to satisfy the fuel sulfur content analysis, provided they establish the fuel sulfur concentration and higher heating value. [District Rule 4320] Federally Enforceable Through Title V Permit
37. All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
38. Prior to operating under this Authority to Construct, permittee shall surrender emission reduction credits for the following quantities of emissions: NO_x: 1,460 lb/quarter; SO_x: 383 lb/quarter; PM₁₀: 1,387 lb/quarter and VOC: 548 lb/quarter. Offset shall be provided at the applicable offset ratio specified in Table 4-2 of Rule 2201 (as amended 9/21/2006). [District Rule 2201] Federally Enforceable Through Title V Permit
39. ERC Certificate Numbers S-796-2, S-2395-1, S-2958-2, S-1337-5 and S-1032-5 (or certificates split from these certificates) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201] Federally Enforceable Through Title V Permit
40. The permittee shall obtain written District approval for the use of any equivalent equipment not specifically approved by this ATC. Approval of the equivalent equipment shall be made in writing and only after the District's determination that the submitted design and performance of the proposed alternative equipment is equivalent to the authorized equipment. [District Rule 2010] Federally Enforceable Through Title V Permit
41. The permittee's request for approval of equivalent equipment shall include the make, model, manufacturer's maximum rating, manufacturer's guaranteed emissions rates, equipment drawing(s) and operational characteristics/parameters. [District Rule 2010] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

42. ATC S-1547-1193-0 shall be canceled upon implementation of this ATC. [District Rule 2201] Federally Enforceable Through Title V Permit



AUTHORITY TO CONSTRUCT

PERMIT NO: S-1547-1194-1

ISSUANCE DATE: 03/29/2013

LEGAL OWNER OR OPERATOR: AERA ENERGY LLC
MAILING ADDRESS: PO BOX 11164
BAKERSFIELD, CA 93389-1164

LOCATION: HEAVY OIL WESTERN STATIONARY SOURCE
KERN COUNTY, CA

EQUIPMENT DESCRIPTION:

MODIFICATION OF 85 MMBTU/HR NATURAL GAS-FIRED STEAM GENERATOR WITH COEN MODEL QLN-ULN ULTRA LOW NOX BURNER, OR NORTH AMERICAN MODEL MAGNA FLAME LEX ULTRA LOW NOX BURNER, OR ADVANCED COMBUSTION TECHNOLOGY GIDEON ULTRA LOW NOX BURNER OR EQUIVALENT, APPROVED TO OPERATE AT VARIOUS SPECIFIED LOCATIONS: REISSUE S-1547-1194-0 WITH AUTHORIZATION FOR INITIAL COMMISSIONING AND REFRACTORY CURING PERIODS

CONDITIONS

1. This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. This unit is approved for operation at the following locations: SE/4 of Section 33 and SE/4 of Section 34 of T28S, R21E; and SW/4 of Section 2 and NE/4, NW/4, SE/4 and SW/4 of Section 3, T29S, R21E. [District Rule 4102]
4. Permittee shall notify the District Compliance Division of each location at which the unit is located in excess of 24 hours. Such notification shall be made no later than 48 hours after starting operation at the location. [District Rule 1070] Federally Enforceable Through Title V Permit
5. This unit shall be equipped with a convection section with at least 235 square feet of heat transfer surface area per MMBtu/hr of maximum rated heat input (verified by manufacturer). [Public Resources Code 21000-21177, CEQA]

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (661) 392-5500 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT. This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Seyed Sadredin, Executive Director / APCO

6. This unit shall be equipped with variable frequency drive high efficiency electrical motors driving the blower and water pump. [Public Resources Code 21000-21177, CEQA]
7. Particulate matter emissions shall not exceed 0.1 grain/dscf at operating conditions, nor 0.1 grain/dscf calculated to 12% CO₂, nor 10 lb/hr. [District Rules 4201, 4301, 5.1 and 5.2.3] Federally Enforceable Through Title V Permit
8. The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap, roof overhang, or any other obstruction. [District Rule 4102]
9. The unit shall only be fired on natural gas with sulfur content not to exceed 0.75 gr-S/100 scf. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
10. Emission rates, except during startup, shutdown, initial commissioning and refractory curing, shall not exceed any of the following limits: NO_x: 7 ppmvd @ 3% O₂ or 0.008 lb-NO_x/MMBtu; PM₁₀: 0.0076 lb-PM₁₀/MMBtu; CO: 25 ppmvd @ 3% O₂ or 0.0185 lb-CO/MMBtu or VOC: 0.003 lb-VOC/MMBtu. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
11. Emission rates during startup, shutdown and refractory curing shall not exceed: particulate matter - 10 pounds per hour, or 0.1 grains/dscf calculated to 12% CO₂; sulfur - 200 pounds of SO₂ per hour, or 2000 ppmv as SO₂, or 0.11 pounds sulfur (as S) per MMBtu on average-wide basis for all units in Rule 4406 plan; NO₂ - 140 pounds per hour or 0.14 pounds per MMBtu. [District Rules 4101, 4102, 4301, 4405, 4406 and 4801] Federally Enforceable Through Title V Permit
12. The initial commissioning period is the time required to complete the necessary safety checks, curing of refractory material and the performance tuning of the burner and attendant systems to achieve compliance with the emission limits required by this permit. The commissioning period begins upon first firing of the unit and shall not extend beyond the first 135 hours of actual burner operation. [District Rule 2201] Federally Enforceable Through Title V Permit
13. The refractory curing period is the time required to gradually increase the firing rate and internal temperature of a unit to thermally temper and set the optimal properties of new refractory material that has been installed as part of a unit's initial commissioning or has been replaced as part of a subsequent maintenance or repair procedure. The refractory curing period following the replacement of material as part of a maintenance or repair procedure shall not exceed 30 hours total of actual burner operation per occurrence. [District Rule 2201] Federally Enforceable Through Title V Permit
14. During the initial commissioning period and any refractory curing period, operator shall limit emissions to the extent possible by optimizing the performance of the low NO_x burner and flue gas recirculation system as can be accommodated by individual initial commissioning and refractory curing activities, by following good work practices and fuel conserving measures and by completing all work in an expeditious manner. Operator shall keep a record of the specific activities undertaken as part of the initial commissioning period and all refractory curing periods and the duration of each activity and shall make the records available for District inspection upon request. [District Rule 2201] Federally Enforceable Through Title V Permit
15. Any of units S-1547-1182 through -1280 may be installed provided that permitted annual emissions do not exceed any of the following limits: NO_x: 49,990 lb/yr; SO_x: 17,210 lb/yr; PM₁₀: 62,282 lb/yr; CO: 151,608 lb/yr or VOC: 24,585 lb/yr, consistent with the quantity of ERCs identified in this project. [District Rules 2201 and 4102] Federally Enforceable Through Title V Permit
16. Annual quantity of natural gas fuel burned in this steam generator shall not exceed 730,000 MMBTU/year. [District Rule 2201] Federally Enforceable Through Title V Permit
17. Duration of start-up and shutdown shall not exceed 2 hours each per occurrence. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
18. Duration of refractory curing shall not exceed 30 hours per each occurrence. Permittee shall keep accurate records of refractory curing duration and make records readily available to the District upon request. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
19. Permittee shall maintain records of duration of each start-up and shutdown, and refractory curing, for a period of five years and make such records readily available for District inspection upon request. [District Rule 4320] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

20. A source test to demonstrate compliance with NO_x and CO emission limits shall be performed within 60 days of startup of this unit. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
21. Source testing to measure natural gas-combustion NO_x and CO emissions from this unit shall be conducted at least once every twelve (12) months (no more than 30 days before or after the required annual source test date). After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months (no more than 30 days before or after the required 36-month source test date). If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
22. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit
23. For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit the test cannot be used to demonstrate compliance with an applicable limit. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
24. The following test methods shall be used: NO_x (ppmv) - EPA Method 7E or ARB Method 100, NO_x (lb/MMBtu) - EPA Method 19; CO (ppmv) - EPA Method 10 or ARB Method 100; Stack gas oxygen (O₂) - EPA Method 3 or 3A or ARB Method 100; stack gas velocities - EPA Method 2; Stack gas moisture content - EPA Method 4; SO_x - EPA Method 6C or 8 or ARB Method 100; fuel gas sulfur as H₂S content - EPA Method 11 or 15; and fuel hhv (MMBtu) - ASTM D 1826 or D 1945 in conjunction with ASTM D 3588. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
25. The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
26. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit
27. The permittee shall monitor and record the stack concentration of NO_x, CO, and O₂ at least once every month (in which a source test is not performed) using a portable analyzer that meets District specifications. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the unit unless monitoring has been performed within the last month. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
28. If the NO_x or CO concentrations corrected to 3%, as measured by the portable analyzer, exceed the applicable emission limit, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rules 4102, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
29. All NO_x, CO, and O₂ emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. The NO_x, CO, and O₂ analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute sample period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive minute period. [District Rules 4102, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

30. The permittee shall maintain records of: (1) the date and time of NO_x, CO and O₂ measurements, (2) the O₂ concentration in percent by volume and the measured NO_x and CO concentrations corrected to 3% O₂, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
31. All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. Unless otherwise specified in the PTO, no determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0 of District Rule 4320. For the purposes of permittee-performed alternate monitoring, emissions measurements may be performed at any time after the unit reaches conditions representative of normal operation. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
32. Shorter time periods for demonstration of compliance after startup or re-ignition may be approved by the APCO by submittal of appropriate technical justification upon implementation of this ATC. [District Rule 2201] Federally Enforceable Through Title V Permit
33. PUC quality natural gas is any gaseous fuel where the sulfur content is no more than one-fourth (0.25) grain of hydrogen sulfide per one hundred (100) standard cubic feet, no more than five (5) grains of total sulfur per one hundred (100) standard cubic feet, and at least 80% methane by volume. [District Rule 4320] Federally Enforceable Through Title V Permit
34. If the steam generator is not fired on PUC-regulated natural gas and compliance is achieved through fuel sulfur content limitations, then the sulfur content of the fuel shall be determined by testing sulfur content at a location after all fuel sources are combined prior to incineration, or by performing mass balance calculations based on monitoring the sulfur content and volume of each fuel source. The sulfur content of the fuel shall be determined using the test methods referenced in this permit. [District Rule 4320] Federally Enforceable Through Title V Permit
35. When complying with sulfur emission limits by fuel analysis or by a combination of source testing and fuel analysis, permittee shall demonstrate compliance at least annually. [District Rule 4320] Federally Enforceable Through Title V Permit
36. If the unit is fired on PUC-regulated natural gas, valid purchase contracts, supplier certifications, tariff sheets, or transportation contracts may be used to satisfy the fuel sulfur content analysis, provided they establish the fuel sulfur concentration and higher heating value. [District Rule 4320] Federally Enforceable Through Title V Permit
37. All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
38. Prior to operating under this Authority to Construct, permittee shall surrender emission reduction credits for the following quantities of emissions: NO_x: 1,460 lb/quarter; SO_x: 383 lb/quarter; PM₁₀: 1,387 lb/quarter and VOC: 548 lb/quarter. Offset shall be provided at the applicable offset ratio specified in Table 4-2 of Rule 2201 (as amended 9/21/2006). [District Rule 2201] Federally Enforceable Through Title V Permit
39. ERC Certificate Numbers S-796-2, S-2395-1, S-2958-2, S-1337-5 and S-1032-5 (or certificates split from these certificates) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201] Federally Enforceable Through Title V Permit
40. The permittee shall obtain written District approval for the use of any equivalent equipment not specifically approved by this ATC. Approval of the equivalent equipment shall be made in writing and only after the District's determination that the submitted design and performance of the proposed alternative equipment is equivalent to the authorized equipment. [District Rule 2010] Federally Enforceable Through Title V Permit
41. The permittee's request for approval of equivalent equipment shall include the make, model, manufacturer's maximum rating, manufacturer's guaranteed emissions rates, equipment drawing(s) and operational characteristics/parameters. [District Rule 2010] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

42. ATC S-1547-1194-0 shall be canceled upon implementation of this ATC. [District Rule 2201] Federally Enforceable Through Title V Permit



AUTHORITY TO CONSTRUCT

PERMIT NO: S-1547-1195-1

ISSUANCE DATE: 03/29/2013

LEGAL OWNER OR OPERATOR: AERA ENERGY LLC
MAILING ADDRESS: PO BOX 11164
BAKERSFIELD, CA 93389-1164

LOCATION: HEAVY OIL WESTERN STATIONARY SOURCE
KERN COUNTY, CA

EQUIPMENT DESCRIPTION:

MODIFICATION OF 85 MMBTU/HR NATURAL GAS-FIRED STEAM GENERATOR WITH COEN MODEL QLN-ULN ULTRA LOW NOX BURNER, OR NORTH AMERICAN MODEL MAGNA FLAME LEX ULTRA LOW NOX BURNER, OR ADVANCED COMBUSTION TECHNOLOGY GIDEON ULTRA LOW NOX BURNER OR EQUIVALENT, APPROVED TO OPERATE AT VARIOUS SPECIFIED LOCATIONS: REISSUE S-1547-1195-0 WITH AUTHORIZATION FOR INITIAL COMMISSIONING AND REFRACTORY CURING PERIODS

CONDITIONS

1. This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. This unit is approved for operation at the following locations: SE/4 of Section 33 and SE/4 of Section 34 of T28S, R21E; and SW/4 of Section 2 and NE/4, NW/4, SE/4 and SW/4 of Section 3, T29S, R21E. [District Rule 4102]
4. Permittee shall notify the District Compliance Division of each location at which the unit is located in excess of 24 hours. Such notification shall be made no later than 48 hours after starting operation at the location. [District Rule 1070] Federally Enforceable Through Title V Permit
5. This unit shall be equipped with a convection section with at least 235 square feet of heat transfer surface area per MMBtu/hr of maximum rated heat input (verified by manufacturer). [Public Resources Code 21000-21177, CEQA]

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (661) 392-5500 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT. This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Sayed Sadredin, Executive Director / APCO

6. This unit shall be equipped with variable frequency drive high efficiency electrical motors driving the blower and water pump. [Public Resources Code 21000-21177, CEQA]
7. Particulate matter emissions shall not exceed 0.1 grain/dscf at operating conditions, nor 0.1 grain/dscf calculated to 12% CO₂, nor 10 lb/hr. [District Rules 4201, 4301, 5.1 and 5.2.3]
8. The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap, roof overhang, or any other obstruction. [District Rule 4102]
9. The unit shall only be fired on natural gas with sulfur content not to exceed 0.75 gr-S/100 scf. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
10. Emission rates, except during startup, shutdown, initial commissioning and refractory curing, shall not exceed any of the following limits: NO_x: 7 ppmvd @ 3% O₂ or 0.008 lb-NO_x/MMBtu; PM₁₀: 0.0076 lb-PM₁₀/MMBtu; CO: 25 ppmvd @ 3% O₂ or 0.0185 lb-CO/MMBtu or VOC: 0.003 lb-VOC/MMBtu. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
11. Emission rates during startup, shutdown and refractory curing shall not exceed: particulate matter - 10 pounds per hour, or 0.1 grains/dscf calculated to 12% CO₂; sulfur - 200 pounds of SO₂ per hour, or 2000 ppmv as SO₂, or 0.11 pounds sulfur (as S) per MMBtu on average-wide basis for all units in Rule 4406 plan; NO₂ - 140 pounds per hour or 0.14 pounds per MMBtu. [District Rules 4101, 4102, 4301, 4405, 4406 and 4801] Federally Enforceable Through Title V Permit
12. The initial commissioning period is the time required to complete the necessary safety checks, curing of refractory material and the performance tuning of the burner and attendant systems to achieve compliance with the emission limits required by this permit. The commissioning period begins upon first firing of the unit and shall not extend beyond the first 135 hours of actual burner operation. [District Rule 2201] Federally Enforceable Through Title V Permit
13. The refractory curing period is the time required to gradually increase the firing rate and internal temperature of a unit to thermally temper and set the optimal properties of new refractory material that has been installed as part of a unit's initial commissioning or has been replaced as part of a subsequent maintenance or repair procedure. The refractory curing period following the replacement of material as part of a maintenance or repair procedure shall not exceed 30 hours total of actual burner operation per occurrence. [District Rule 2201] Federally Enforceable Through Title V Permit
14. During the initial commissioning period and any refractory curing period, operator shall limit emissions to the extent possible by optimizing the performance of the low NO_x burner and flue gas recirculation system as can be accommodated by individual initial commissioning and refractory curing activities, by following good work practices and fuel conserving measures and by completing all work in an expeditious manner. Operator shall keep a record of the specific activities undertaken as part of the initial commissioning period and all refractory curing periods and the duration of each activity and shall make the records available for District inspection upon request. [District Rule 2201] Federally Enforceable Through Title V Permit
15. Any of units S-1547-1182 through -1280 may be installed provided that permitted annual emissions do not exceed any of the following limits: NO_x: 49,990 lb/yr; SO_x: 17,210 lb/yr; PM₁₀: 62,282 lb/yr; CO: 151,608 lb/yr or VOC: 24,585 lb/yr, consistent with the quantity of ERCs identified in this project. [District Rules 2201 and 4102] Federally Enforceable Through Title V Permit
16. Annual quantity of natural gas fuel burned in this steam generator shall not exceed 730,000 MMBTU/year. [District Rule 2201] Federally Enforceable Through Title V Permit
17. Duration of start-up and shutdown shall not exceed 2 hours each per occurrence. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
18. Duration of refractory curing shall not exceed 30 hours per each occurrence. Permittee shall keep accurate records of refractory curing duration and make records readily available to the District upon request. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
19. Permittee shall maintain records of duration of each start-up and shutdown, and refractory curing, for a period of five years and make such records readily available for District inspection upon request. [District Rule 4320] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

20. A source test to demonstrate compliance with NO_x and CO emission limits shall be performed within 60 days of startup of this unit. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
21. Source testing to measure natural gas-combustion NO_x and CO emissions from this unit shall be conducted at least once every twelve (12) months (no more than 30 days before or after the required annual source test date). After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months (no more than 30 days before or after the required 36-month source test date). If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
22. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit
23. For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit the test cannot be used to demonstrate compliance with an applicable limit. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
24. The following test methods shall be used: NO_x (ppmv) - EPA Method 7E or ARB Method 100, NO_x (lb/MMBtu) - EPA Method 19; CO (ppmv) - EPA Method 10 or ARB Method 100; Stack gas oxygen (O₂) - EPA Method 3 or 3A or ARB Method 100; stack gas velocities - EPA Method 2; Stack gas moisture content - EPA Method 4; SO_x - EPA Method 6C or 8 or ARB Method 100; fuel gas sulfur as H₂S content - EPA Method 11 or 15; and fuel hhv (MMBtu) - ASTM D 1826 or D 1945 in conjunction with ASTM D 3588. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
25. The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
26. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit
27. The permittee shall monitor and record the stack concentration of NO_x, CO, and O₂ at least once every month (in which a source test is not performed) using a portable analyzer that meets District specifications. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the unit unless monitoring has been performed within the last month. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
28. If the NO_x or CO concentrations corrected to 3%, as measured by the portable analyzer, exceed the applicable emission limit, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rules 4102, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
29. All NO_x, CO, and O₂ emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. The NO_x, CO, and O₂ analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute sample period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive minute period. [District Rules 4102, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

30. The permittee shall maintain records of: (1) the date and time of NO_x, CO and O₂ measurements, (2) the O₂ concentration in percent by volume and the measured NO_x and CO concentrations corrected to 3% O₂, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
31. All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. Unless otherwise specified in the PTO, no determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0 of District Rule 4320. For the purposes of permittee-performed alternate monitoring, emissions measurements may be performed at any time after the unit reaches conditions representative of normal operation. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
32. Shorter time periods for demonstration of compliance after startup or re-ignition may be approved by the APCO by submittal of appropriate technical justification upon implementation of this ATC. [District Rule 2201] Federally Enforceable Through Title V Permit
33. PUC quality natural gas is any gaseous fuel where the sulfur content is no more than one-fourth (0.25) grain of hydrogen sulfide per one hundred (100) standard cubic feet, no more than five (5) grains of total sulfur per one hundred (100) standard cubic feet, and at least 80% methane by volume. [District Rule 4320] Federally Enforceable Through Title V Permit
34. If the steam generator is not fired on PUC-regulated natural gas and compliance is achieved through fuel sulfur content limitations, then the sulfur content of the fuel shall be determined by testing sulfur content at a location after all fuel sources are combined prior to incineration, or by performing mass balance calculations based on monitoring the sulfur content and volume of each fuel source. The sulfur content of the fuel shall be determined using the test methods referenced in this permit. [District Rule 4320] Federally Enforceable Through Title V Permit
35. When complying with sulfur emission limits by fuel analysis or by a combination of source testing and fuel analysis, permittee shall demonstrate compliance at least annually. [District Rule 4320] Federally Enforceable Through Title V Permit
36. If the unit is fired on PUC-regulated natural gas, valid purchase contracts, supplier certifications, tariff sheets, or transportation contracts may be used to satisfy the fuel sulfur content analysis, provided they establish the fuel sulfur concentration and higher heating value. [District Rule 4320] Federally Enforceable Through Title V Permit
37. All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
38. Prior to operating under this Authority to Construct, permittee shall surrender emission reduction credits for the following quantities of emissions: NO_x: 1,460 lb/quarter; SO_x: 383 lb/quarter; PM₁₀: 1,387 lb/quarter and VOC: 548 lb/quarter. Offset shall be provided at the applicable offset ratio specified in Table 4-2 of Rule 2201 (as amended 9/21/2006). [District Rule 2201] Federally Enforceable Through Title V Permit
39. ERC Certificate Numbers S-796-2, S-2395-1, S-2958-2, S-1337-5 and S-1032-5 (or certificates split from these certificates) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201] Federally Enforceable Through Title V Permit
40. The permittee shall obtain written District approval for the use of any equivalent equipment not specifically approved by this ATC. Approval of the equivalent equipment shall be made in writing and only after the District's determination that the submitted design and performance of the proposed alternative equipment is equivalent to the authorized equipment. [District Rule 2010] Federally Enforceable Through Title V Permit
41. The permittee's request for approval of equivalent equipment shall include the make, model, manufacturer's maximum rating, manufacturer's guaranteed emissions rates, equipment drawing(s) and operational characteristics/parameters. [District Rule 2010] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

42. ATC S-1547-1195-0 shall be canceled upon implementation of this ATC. [District Rule 2201] Federally Enforceable Through Title V Permit



AUTHORITY TO CONSTRUCT

PERMIT NO: S-1547-1196-1

ISSUANCE DATE: 03/29/2013

LEGAL OWNER OR OPERATOR: AERA ENERGY LLC
MAILING ADDRESS: PO BOX 11164
BAKERSFIELD, CA 93389-1164

LOCATION: HEAVY OIL WESTERN STATIONARY SOURCE
KERN COUNTY, CA

EQUIPMENT DESCRIPTION:

MODIFICATION OF 85 MMBTU/HR NATURAL GAS-FIRED STEAM GENERATOR WITH COEN MODEL QLN-ULN ULTRA LOW NOX BURNER, OR NORTH AMERICAN MODEL MAGNA FLAME LEX ULTRA LOW NOX BURNER, OR ADVANCED COMBUSTION TECHNOLOGY GIDEON ULTRA LOW NOX BURNER OR EQUIVALENT, APPROVED TO OPERATE AT VARIOUS SPECIFIED LOCATIONS: REISSUE S-1547-1196-0 WITH AUTHORIZATION FOR INITIAL COMMISSIONING AND REFRACTORY CURING PERIODS

CONDITIONS

1. This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. This unit is approved for operation at the following locations: SE/4 of Section 33 and SE/4 of Section 34 of T28S, R21E; and SW/4 of Section 2 and NE/4, NW/4, SE/4 and SW/4 of Section 3, T29S, R21E. [District Rule 4102]
4. Permittee shall notify the District Compliance Division of each location at which the unit is located in excess of 24 hours. Such notification shall be made no later than 48 hours after starting operation at the location. [District Rule 1070] Federally Enforceable Through Title V Permit
5. This unit shall be equipped with a convection section with at least 235 square feet of heat transfer surface area per MMBtu/hr of maximum rated heat input (verified by manufacturer). [Public Resources Code 21000-21177, CEQA]

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (661) 392-5500 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT. This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Seyed Sadredin, Executive Director / APCO

6. This unit shall be equipped with variable frequency drive high efficiency electrical motors driving the blower and water pump. [Public Resources Code 21000-21177, CEQA]
7. Particulate matter emissions shall not exceed 0.1 grain/dscf at operating conditions, nor 0.1 grain/dscf calculated to 12% CO₂, nor 10 lb/hr. [District Rules 4201, 4301, 5.1 and 5.2.3]
8. The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap, roof overhang, or any other obstruction. [District Rule 4102]
9. The unit shall only be fired on natural gas with sulfur content not to exceed 0.75 gr-S/100 scf. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
10. Emission rates, except during startup, shutdown, initial commissioning and refractory curing, shall not exceed any of the following limits: NO_x: 7 ppmvd @ 3% O₂ or 0.008 lb-NO_x/MMBtu; PM₁₀: 0.0076 lb-PM₁₀/MMBtu; CO: 25 ppmvd @ 3% O₂ or 0.0185 lb-CO/MMBtu or VOC: 0.003 lb-VOC/MMBtu. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
11. The initial commissioning period is the time required to complete the necessary safety checks, curing of refractory material and the performance tuning of the burner and attendant systems to achieve compliance with the emission limits required by this permit. The commissioning period begins upon first firing of the unit and shall not extend beyond the first 135 hours of actual burner operation. [District Rule 2201] Federally Enforceable Through Title V Permit
12. The refractory curing period is the time required to gradually increase the firing rate and internal temperature of a unit to thermally temper and set the optimal properties of new refractory material that has been installed as part of a unit's initial commissioning or has been replaced as part of a subsequent maintenance or repair procedure. The refractory curing period following the replacement of material as part of a maintenance or repair procedure shall not exceed 30 hours total of actual burner operation per occurrence. [District Rule 2201] Federally Enforceable Through Title V Permit
13. During the initial commissioning period and any refractory curing period, operator shall limit emissions to the extent possible by optimizing the performance of the low NO_x burner and flue gas recirculation system as can be accommodated by individual initial commissioning and refractory curing activities, by following good work practices and fuel conserving measures and by completing all work in an expeditious manner. Operator shall keep a record of the specific activities undertaken as part of the initial commissioning period and all refractory curing periods and the duration of each activity and shall make the records available for District inspection upon request. [District Rule 2201] Federally Enforceable Through Title V Permit
14. Emission rates during startup, shutdown and refractory curing shall not exceed: particulate matter - 10 pounds per hour, or 0.1 grains/dscf calculated to 12% CO₂; sulfur - 200 pounds of SO₂ per hour, or 2000 ppmv as SO₂, or 0.11 pounds sulfur (as S) per MMBtu on average-wide basis for all units in Rule 4406 plan; NO₂ - 140 pounds per hour or 0.14 pounds per MMBtu. [District Rules 4101, 4102, 4301, 4405, 4406 and 4801] Federally Enforceable Through Title V Permit
15. Any of units S-1547-1182 through -1280 may be installed provided that permitted annual emissions do not exceed any of the following limits: NO_x: 49,990 lb/yr; SO_x: 17,210 lb/yr; PM₁₀: 62,282 lb/yr; CO: 151,608 lb/yr or VOC: 24,585 lb/yr, consistent with the quantity of ERCs identified in this project. [District Rules 2201 and 4102] Federally Enforceable Through Title V Permit
16. Annual quantity of natural gas fuel burned in this steam generator shall not exceed 730,000 MMBTU/year. [District Rule 2201] Federally Enforceable Through Title V Permit
17. Duration of start-up and shutdown shall not exceed 2 hours each per occurrence. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
18. Duration of refractory curing shall not exceed 30 hours per each occurrence. Permittee shall keep accurate records of refractory curing duration and make records readily available to the District upon request. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
19. Permittee shall maintain records of duration of each start-up and shutdown, and refractory curing, for a period of five years and make such records readily available for District inspection upon request. [District Rule 4320] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

20. A source test to demonstrate compliance with NO_x and CO emission limits shall be performed within 60 days of startup of this unit. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
21. Source testing to measure natural gas-combustion NO_x and CO emissions from this unit shall be conducted at least once every twelve (12) months (no more than 30 days before or after the required annual source test date). After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months (no more than 30 days before or after the required 36-month source test date). If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
22. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit
23. For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit the test cannot be used to demonstrate compliance with an applicable limit. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
24. The following test methods shall be used: NO_x (ppmv) - EPA Method 7E or ARB Method 100, NO_x (lb/MMBtu) - EPA Method 19; CO (ppmv) - EPA Method 10 or ARB Method 100; Stack gas oxygen (O₂) - EPA Method 3 or 3A or ARB Method 100; stack gas velocities - EPA Method 2; Stack gas moisture content - EPA Method 4; SO_x - EPA Method 6C or 8 or ARB Method 100; fuel gas sulfur as H₂S content - EPA Method 11 or 15; and fuel hhv (MMBtu) - ASTM D 1826 or D 1945 in conjunction with ASTM D 3588. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
25. The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
26. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit
27. The permittee shall monitor and record the stack concentration of NO_x, CO, and O₂ at least once every month (in which a source test is not performed) using a portable analyzer that meets District specifications. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the unit unless monitoring has been performed within the last month. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
28. If the NO_x or CO concentrations corrected to 3%, as measured by the portable analyzer, exceed the applicable emission limit, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rules 4102, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
29. All NO_x, CO, and O₂ emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. The NO_x, CO, and O₂ analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute sample period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive minute period. [District Rules 4102, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

30. The permittee shall maintain records of: (1) the date and time of NO_x, CO and O₂ measurements, (2) the O₂ concentration in percent by volume and the measured NO_x and CO concentrations corrected to 3% O₂, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
31. All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. Unless otherwise specified in the PTO, no determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0 of District Rule 4320. For the purposes of permittee-performed alternate monitoring, emissions measurements may be performed at any time after the unit reaches conditions representative of normal operation. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
32. Shorter time periods for demonstration of compliance after startup or re-ignition may be approved by the APCO by submittal of appropriate technical justification upon implementation of this ATC. [District Rule 2201] Federally Enforceable Through Title V Permit
33. PUC quality natural gas is any gaseous fuel where the sulfur content is no more than one-fourth (0.25) grain of hydrogen sulfide per one hundred (100) standard cubic feet, no more than five (5) grains of total sulfur per one hundred (100) standard cubic feet, and at least 80% methane by volume. [District Rule 4320] Federally Enforceable Through Title V Permit
34. If the steam generator is not fired on PUC-regulated natural gas and compliance is achieved through fuel sulfur content limitations, then the sulfur content of the fuel shall be determined by testing sulfur content at a location after all fuel sources are combined prior to incineration, or by performing mass balance calculations based on monitoring the sulfur content and volume of each fuel source. The sulfur content of the fuel shall be determined using the test methods referenced in this permit. [District Rule 4320] Federally Enforceable Through Title V Permit
35. When complying with sulfur emission limits by fuel analysis or by a combination of source testing and fuel analysis, permittee shall demonstrate compliance at least annually. [District Rule 4320] Federally Enforceable Through Title V Permit
36. If the unit is fired on PUC-regulated natural gas, valid purchase contracts, supplier certifications, tariff sheets, or transportation contracts may be used to satisfy the fuel sulfur content analysis, provided they establish the fuel sulfur concentration and higher heating value. [District Rule 4320] Federally Enforceable Through Title V Permit
37. All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
38. Prior to operating under this Authority to Construct, permittee shall surrender emission reduction credits for the following quantities of emissions: NO_x: 1,460 lb/quarter; SO_x: 383 lb/quarter; PM₁₀: 1,387 lb/quarter and VOC: 548 lb/quarter. Offset shall be provided at the applicable offset ratio specified in Table 4-2 of Rule 2201 (as amended 9/21/2006). [District Rule 2201] Federally Enforceable Through Title V Permit
39. ERC Certificate Numbers S-796-2, S-2395-1, S-2958-2, S-1337-5 and S-1032-5 (or certificates split from these certificates) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201] Federally Enforceable Through Title V Permit
40. The permittee shall obtain written District approval for the use of any equivalent equipment not specifically approved by this ATC. Approval of the equivalent equipment shall be made in writing and only after the District's determination that the submitted design and performance of the proposed alternative equipment is equivalent to the authorized equipment. [District Rule 2010] Federally Enforceable Through Title V Permit
41. The permittee's request for approval of equivalent equipment shall include the make, model, manufacturer's maximum rating, manufacturer's guaranteed emissions rates, equipment drawing(s) and operational characteristics/parameters. [District Rule 2010] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

42. ATC S-1547-1196-0 shall be canceled upon implementation of this ATC. [District Rule 2201] Federally Enforceable Through Title V Permit



AUTHORITY TO CONSTRUCT

PERMIT NO: S-1547-1197-1

ISSUANCE DATE: 03/29/2013

LEGAL OWNER OR OPERATOR: AERA ENERGY LLC
MAILING ADDRESS: PO BOX 11164
BAKERSFIELD, CA 93389-1164

LOCATION: HEAVY OIL WESTERN STATIONARY SOURCE
KERN COUNTY, CA

EQUIPMENT DESCRIPTION:

MODIFICATION OF 85 MMBTU/HR NATURAL GAS-FIRED STEAM GENERATOR WITH COEN MODEL QLN-ULN ULTRA LOW NOX BURNER, OR NORTH AMERICAN MODEL MAGNA FLAME LEX ULTRA LOW NOX BURNER, OR ADVANCED COMBUSTION TECHNOLOGY GIDEON ULTRA LOW NOX BURNER OR EQUIVALENT, APPROVED TO OPERATE AT VARIOUS SPECIFIED LOCATIONS: REISSUE S-1547-1197-0 WITH AUTHORIZATION FOR INITIAL COMMISSIONING AND REFRACTORY CURING PERIODS

CONDITIONS

1. This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. This unit is approved for operation at the following locations: SE/4 of Section 33 and SE/4 of Section 34 of T28S, R21E; and SW/4 of Section 2 and NE/4, NW/4, SE/4 and SW/4 of Section 3, T29S, R21E. [District Rule 4102]
4. Permittee shall notify the District Compliance Division of each location at which the unit is located in excess of 24 hours. Such notification shall be made no later than 48 hours after starting operation at the location. [District Rule 1070] Federally Enforceable Through Title V Permit
5. This unit shall be equipped with a convection section with at least 235 square feet of heat transfer surface area per MMBtu/hr of maximum rated heat input (verified by manufacturer). [Public Resources Code 21000-21177, CEQA]

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (661) 392-5500 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT. This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Sayed Sadredin, Executive Director / APCO

6. This unit shall be equipped with variable frequency drive high efficiency electrical motors driving the blower and water pump. [Public Resources Code 21000-21177, CEQA]
7. Particulate matter emissions shall not exceed 0.1 grain/dscf at operating conditions, nor 0.1 grain/dscf calculated to 12% CO₂, nor 10 lb/hr. [District Rules 4201, 4301, 5.1 and 5.2.3] Federally Enforceable Through Title V Permit
8. The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap, roof overhang, or any other obstruction. [District Rule 4102]
9. The unit shall only be fired on natural gas with sulfur content not to exceed 0.75 gr-S/100 scf. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
10. Emission rates, except during startup, shutdown, initial commissioning and refractory curing, shall not exceed any of the following limits:: NO_x: 7 ppmvd @ 3% O₂ or 0.008 lb-NO_x/MMBtu; PM₁₀: 0.0076 lb-PM₁₀/MMBtu; CO: 25 ppmvd @ 3% O₂ or 0.0185 lb-CO/MMBtu or VOC: 0.003 lb-VOC/MMBtu. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
11. Emission rates during startup, shutdown and refractory curing shall not exceed: particulate matter - 10 pounds per hour, or 0.1 grains/dscf calculated to 12% CO₂; sulfur - 200 pounds of SO₂ per hour, or 2000 ppmv as SO₂, or 0.11 pounds sulfur (as S) per MMBtu on average-wide basis for all units in Rule 4406 plan; NO₂ - 140 pounds per hour or 0.14 pounds per MMBtu. [District Rules 4101, 4102, 4301, 4405, 4406 and 4801] Federally Enforceable Through Title V Permit
12. The initial commissioning period is the time required to complete the necessary safety checks, curing of refractory material and the performance tuning of the burner and attendant systems to achieve compliance with the emission limits required by this permit. The commissioning period begins upon first firing of the unit and shall not extend beyond the first 135 hours of actual burner operation. [District Rule 2201] Federally Enforceable Through Title V Permit
13. The refractory curing period is the time required to gradually increase the firing rate and internal temperature of a unit to thermally temper and set the optimal properties of new refractory material that has been installed as part of a unit's initial commissioning or has been replaced as part of a subsequent maintenance or repair procedure. The refractory curing period following the replacement of material as part of a maintenance or repair procedure shall not exceed 30 hours total of actual burner operation per occurrence. [District Rule 2201] Federally Enforceable Through Title V Permit
14. During the initial commissioning period and any refractory curing period, operator shall limit emissions to the extent possible by optimizing the performance of the low NO_x burner and flue gas recirculation system as can be accommodated by individual initial commissioning and refractory curing activities, by following good work practices and fuel conserving measures and by completing all work in an expeditious manner. Operator shall keep a record of the specific activities undertaken as part of the initial commissioning period and all refractory curing periods and the duration of each activity and shall make the records available for District inspection upon request. [District Rule 2201] Federally Enforceable Through Title V Permit
15. Any of units S-1547-1182 through -1280 may be installed provided that permitted annual emissions do not exceed any of the following limits: NO_x: 49,990 lb/yr; SO_x: 17,210 lb/yr; PM₁₀: 62,282 lb/yr; CO: 151,608 lb/yr or VOC: 24,585 lb/yr, consistent with the quantity of ERCs identified in this project. [District Rules 2201 and 4102] Federally Enforceable Through Title V Permit
16. Annual quantity of natural gas fuel burned in this steam generator shall not exceed 730,000 MMBTU/year. [District Rule 2201] Federally Enforceable Through Title V Permit
17. Duration of start-up and shutdown shall not exceed 2 hours each per occurrence. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
18. Duration of refractory curing shall not exceed 30 hours per each occurrence. Permittee shall keep accurate records of refractory curing duration and make records readily available to the District upon request. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
19. Permittee shall maintain records of duration of each start-up and shutdown, and refractory curing, for a period of five years and make such records readily available for District inspection upon request. [District Rule 4320] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

20. A source test to demonstrate compliance with NO_x and CO emission limits shall be performed within 60 days of startup of this unit. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
21. Source testing to measure natural gas-combustion NO_x and CO emissions from this unit shall be conducted at least once every twelve (12) months (no more than 30 days before or after the required annual source test date). After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months (no more than 30 days before or after the required 36-month source test date). If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
22. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit
23. For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit the test cannot be used to demonstrate compliance with an applicable limit. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
24. The following test methods shall be used: NO_x (ppmv) - EPA Method 7E or ARB Method 100, NO_x (lb/MMBtu) - EPA Method 19; CO (ppmv) - EPA Method 10 or ARB Method 100; Stack gas oxygen (O₂) - EPA Method 3 or 3A or ARB Method 100; stack gas velocities - EPA Method 2; Stack gas moisture content - EPA Method 4; SO_x - EPA Method 6C or 8 or ARB Method 100; fuel gas sulfur as H₂S content - EPA Method 11 or 15; and fuel hhv (MMBtu) - ASTM D 1826 or D 1945 in conjunction with ASTM D 3588. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
25. The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
26. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit
27. The permittee shall monitor and record the stack concentration of NO_x, CO, and O₂ at least once every month (in which a source test is not performed) using a portable analyzer that meets District specifications. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the unit unless monitoring has been performed within the last month. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
28. If the NO_x or CO concentrations corrected to 3%, as measured by the portable analyzer, exceed the applicable emission limit, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rules 4102, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
29. All NO_x, CO, and O₂ emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. The NO_x, CO, and O₂ analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute sample period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive minute period. [District Rules 4102, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

30. The permittee shall maintain records of: (1) the date and time of NO_x, CO and O₂ measurements, (2) the O₂ concentration in percent by volume and the measured NO_x and CO concentrations corrected to 3% O₂, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
31. All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. Unless otherwise specified in the PTO, no determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0 of District Rule 4320. For the purposes of permittee-performed alternate monitoring, emissions measurements may be performed at any time after the unit reaches conditions representative of normal operation. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
32. Shorter time periods for demonstration of compliance after startup or re-ignition may be approved by the APCO by submittal of appropriate technical justification upon implementation of this ATC. [District Rule 2201] Federally Enforceable Through Title V Permit
33. PUC quality natural gas is any gaseous fuel where the sulfur content is no more than one-fourth (0.25) grain of hydrogen sulfide per one hundred (100) standard cubic feet, no more than five (5) grains of total sulfur per one hundred (100) standard cubic feet, and at least 80% methane by volume. [District Rule 4320] Federally Enforceable Through Title V Permit
34. If the steam generator is not fired on PUC-regulated natural gas and compliance is achieved through fuel sulfur content limitations, then the sulfur content of the fuel shall be determined by testing sulfur content at a location after all fuel sources are combined prior to incineration, or by performing mass balance calculations based on monitoring the sulfur content and volume of each fuel source. The sulfur content of the fuel shall be determined using the test methods referenced in this permit. [District Rule 4320] Federally Enforceable Through Title V Permit
35. When complying with sulfur emission limits by fuel analysis or by a combination of source testing and fuel analysis, permittee shall demonstrate compliance at least annually. [District Rule 4320] Federally Enforceable Through Title V Permit
36. If the unit is fired on PUC-regulated natural gas, valid purchase contracts, supplier certifications, tariff sheets, or transportation contracts may be used to satisfy the fuel sulfur content analysis, provided they establish the fuel sulfur concentration and higher heating value. [District Rule 4320] Federally Enforceable Through Title V Permit
37. All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
38. Prior to operating under this Authority to Construct, permittee shall surrender emission reduction credits for the following quantities of emissions: NO_x: 1,460 lb/quarter; SO_x: 383 lb/quarter; PM₁₀: 1,387 lb/quarter and VOC: 548 lb/quarter. Offset shall be provided at the applicable offset ratio specified in Table 4-2 of Rule 2201 (as amended 9/21/2006). [District Rule 2201] Federally Enforceable Through Title V Permit
39. ERC Certificate Numbers S-796-2, S-2395-1, S-2958-2, S-1337-5 and S-1032-5 (or certificates split from these certificates) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201] Federally Enforceable Through Title V Permit
40. The permittee shall obtain written District approval for the use of any equivalent equipment not specifically approved by this ATC. Approval of the equivalent equipment shall be made in writing and only after the District's determination that the submitted design and performance of the proposed alternative equipment is equivalent to the authorized equipment. [District Rule 2010] Federally Enforceable Through Title V Permit
41. The permittee's request for approval of equivalent equipment shall include the make, model, manufacturer's maximum rating, manufacturer's guaranteed emissions rates, equipment drawing(s) and operational characteristics/parameters. [District Rule 2010] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

42. ATC S-1547-1197-0 shall be canceled upon implementation of this ATC. [District Rule 2201] Federally Enforceable Through Title V Permit



San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT



AUTHORITY TO CONSTRUCT

PERMIT NO: S-1547-1198-1

ISSUANCE DATE: 03/29/2013

LEGAL OWNER OR OPERATOR: AERA ENERGY LLC
MAILING ADDRESS: PO BOX 11164
BAKERSFIELD, CA 93389-1164

LOCATION: HEAVY OIL WESTERN STATIONARY SOURCE
KERN COUNTY, CA

EQUIPMENT DESCRIPTION:

MODIFICATION OF 85 MMBTU/HR NATURAL GAS-FIRED STEAM GENERATOR WITH COEN MODEL QLN-ULN ULTRA LOW NOX BURNER, OR NORTH AMERICAN MODEL MAGNA FLAME LEX ULTRA LOW NOX BURNER, OR ADVANCED COMBUSTION TECHNOLOGY GIDEON ULTRA LOW NOX BURNER OR EQUIVALENT, APPROVED TO OPERATE AT VARIOUS SPECIFIED LOCATIONS: REISSUE S-1547-1198-0 WITH AUTHORIZATION FOR INITIAL COMMISSIONING AND REFRACTORY CURING PERIODS

CONDITIONS

1. This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. This unit is approved for operation at the following locations: SE/4 of Section 33 and SE/4 of Section 34 of T28S, R21E; and SW/4 of Section 2 and NE/4, NW/4, SE/4 and SW/4 of Section 3, T29S, R21E. [District Rule 4102]
4. Permittee shall notify the District Compliance Division of each location at which the unit is located in excess of 24 hours. Such notification shall be made no later than 48 hours after starting operation at the location. [District Rule 1070] Federally Enforceable Through Title V Permit
5. This unit shall be equipped with a convection section with at least 235 square feet of heat transfer surface area per MMBtu/hr of maximum rated heat input (verified by manufacturer). [Public Resources Code 21000-21177, CEQA]

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (661) 392-5500 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT. This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Sayed Sadredin, Executive Director / APCO

6. This unit shall be equipped with variable frequency drive high efficiency electrical motors driving the blower and water pump. [Public Resources Code 21000-21177, CEQA]
7. Particulate matter emissions shall not exceed 0.1 grain/dscf at operating conditions, nor 0.1 grain/dscf calculated to 12% CO₂, nor 10 lb/hr. [District Rules 4201, 4301, 5.1 and 5.2.3] Federally Enforceable Through Title V Permit
8. The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap, roof overhang, or any other obstruction. [District Rule 4102]
9. The unit shall only be fired on natural gas with sulfur content not to exceed 0.75 gr-S/100 scf. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
10. Emission rates, except during startup, shutdown, initial commissioning and refractory curing, shall not exceed any of the following limits: NO_x: 7 ppmvd @ 3% O₂ or 0.008 lb-NO_x/MMBtu; PM₁₀: 0.0076 lb-PM₁₀/MMBtu; CO: 25 ppmvd @ 3% O₂ or 0.0185 lb-CO/MMBtu or VOC: 0.003 lb-VOC/MMBtu. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
11. Emission rates during startup, shutdown and refractory curing shall not exceed: particulate matter - 10 pounds per hour, or 0.1 grains/dscf calculated to 12% CO₂; sulfur - 200 pounds of SO₂ per hour, or 2000 ppmv as SO₂, or 0.11 pounds sulfur (as S) per MMBtu on average-wide basis for all units in Rule 4406 plan; NO₂ - 140 pounds per hour or 0.14 pounds per MMBtu. [District Rules 4101, 4102, 4301, 4405, 4406 and 4801] Federally Enforceable Through Title V Permit
12. The initial commissioning period is the time required to complete the necessary safety checks, curing of refractory material and the performance tuning of the burner and attendant systems to achieve compliance with the emission limits required by this permit. The commissioning period begins upon first firing of the unit and shall not extend beyond the first 135 hours of actual burner operation. [District Rule 2201] Federally Enforceable Through Title V Permit
13. The refractory curing period is the time required to gradually increase the firing rate and internal temperature of a unit to thermally temper and set the optimal properties of new refractory material that has been installed as part of a unit's initial commissioning or has been replaced as part of a subsequent maintenance or repair procedure. The refractory curing period following the replacement of material as part of a maintenance or repair procedure shall not exceed 30 hours total of actual burner operation per occurrence. [District Rule 2201] Federally Enforceable Through Title V Permit
14. During the initial commissioning period and any refractory curing period, operator shall limit emissions to the extent possible by optimizing the performance of the low NO_x burner and flue gas recirculation system as can be accommodated by individual initial commissioning and refractory curing activities, by following good work practices and fuel conserving measures and by completing all work in an expeditious manner. Operator shall keep a record of the specific activities undertaken as part of the initial commissioning period and all refractory curing periods and the duration of each activity and shall make the records available for District inspection upon request. [District Rule 2201] Federally Enforceable Through Title V Permit
15. Any of units S-1547-1182 through -1280 may be installed provided that permitted annual emissions do not exceed any of the following limits: NO_x: 49,990 lb/yr; SO_x: 17,210 lb/yr; PM₁₀: 62,282 lb/yr; CO: 151,608 lb/yr or VOC: 24,585 lb/yr, consistent with the quantity of ERCs identified in this project. [District Rules 2201 and 4102] Federally Enforceable Through Title V Permit
16. Annual quantity of natural gas fuel burned in this steam generator shall not exceed 730,000 MMBTU/year. [District Rule 2201] Federally Enforceable Through Title V Permit
17. Duration of start-up and shutdown shall not exceed 2 hours each per occurrence. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
18. Duration of refractory curing shall not exceed 30 hours per each occurrence. Permittee shall keep accurate records of refractory curing duration and make records readily available to the District upon request. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
19. Permittee shall maintain records of duration of each start-up and shutdown, and refractory curing, for a period of five years and make such records readily available for District inspection upon request. [District Rule 4320] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

20. A source test to demonstrate compliance with NO_x and CO emission limits shall be performed within 60 days of startup of this unit. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
21. Source testing to measure natural gas-combustion NO_x and CO emissions from this unit shall be conducted at least once every twelve (12) months (no more than 30 days before or after the required annual source test date). After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months (no more than 30 days before or after the required 36-month source test date). If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
22. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit
23. For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit the test cannot be used to demonstrate compliance with an applicable limit. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
24. The following test methods shall be used: NO_x (ppmv) - EPA Method 7E or ARB Method 100, NO_x (lb/MMBtu) - EPA Method 19; CO (ppmv) - EPA Method 10 or ARB Method 100; Stack gas oxygen (O₂) - EPA Method 3 or 3A or ARB Method 100; stack gas velocities - EPA Method 2; Stack gas moisture content - EPA Method 4; SO_x - EPA Method 6C or 8 or ARB Method 100; fuel gas sulfur as H₂S content - EPA Method 11 or 15; and fuel hhv (MMBtu) - ASTM D 1826 or D 1945 in conjunction with ASTM D 3588. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
25. The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
26. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit
27. The permittee shall monitor and record the stack concentration of NO_x, CO, and O₂ at least once every month (in which a source test is not performed) using a portable analyzer that meets District specifications. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the unit unless monitoring has been performed within the last month. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
28. If the NO_x or CO concentrations corrected to 3%, as measured by the portable analyzer, exceed the applicable emission limit, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rules 4102, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
29. All NO_x, CO, and O₂ emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. The NO_x, CO, and O₂ analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute sample period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive minute period. [District Rules 4102, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

30. The permittee shall maintain records of: (1) the date and time of NO_x, CO and O₂ measurements, (2) the O₂ concentration in percent by volume and the measured NO_x and CO concentrations corrected to 3% O₂, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
31. All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. Unless otherwise specified in the PTO, no determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0 of District Rule 4320. For the purposes of permittee-performed alternate monitoring, emissions measurements may be performed at any time after the unit reaches conditions representative of normal operation. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
32. Shorter time periods for demonstration of compliance after startup or re-ignition may be approved by the APCO by submittal of appropriate technical justification upon implementation of this ATC. [District Rule 2201] Federally Enforceable Through Title V Permit
33. PUC quality natural gas is any gaseous fuel where the sulfur content is no more than one-fourth (0.25) grain of hydrogen sulfide per one hundred (100) standard cubic feet, no more than five (5) grains of total sulfur per one hundred (100) standard cubic feet, and at least 80% methane by volume. [District Rule 4320] Federally Enforceable Through Title V Permit
34. If the steam generator is not fired on PUC-regulated natural gas and compliance is achieved through fuel sulfur content limitations, then the sulfur content of the fuel shall be determined by testing sulfur content at a location after all fuel sources are combined prior to incineration, or by performing mass balance calculations based on monitoring the sulfur content and volume of each fuel source. The sulfur content of the fuel shall be determined using the test methods referenced in this permit. [District Rule 4320] Federally Enforceable Through Title V Permit
35. When complying with sulfur emission limits by fuel analysis or by a combination of source testing and fuel analysis, permittee shall demonstrate compliance at least annually. [District Rule 4320] Federally Enforceable Through Title V Permit
36. If the unit is fired on PUC-regulated natural gas, valid purchase contracts, supplier certifications, tariff sheets, or transportation contracts may be used to satisfy the fuel sulfur content analysis, provided they establish the fuel sulfur concentration and higher heating value. [District Rule 4320] Federally Enforceable Through Title V Permit
37. All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
38. Prior to operating under this Authority to Construct, permittee shall surrender emission reduction credits for the following quantities of emissions: NO_x: 1,460 lb/quarter; SO_x: 383 lb/quarter; PM₁₀: 1,387 lb/quarter and VOC: 548 lb/quarter. Offset shall be provided at the applicable offset ratio specified in Table 4-2 of Rule 2201 (as amended 9/21/2006). [District Rule 2201] Federally Enforceable Through Title V Permit
39. ERC Certificate Numbers S-796-2, S-2395-1, S-2958-2, S-1337-5 and S-1032-5 (or certificates split from these certificates) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201] Federally Enforceable Through Title V Permit
40. The permittee shall obtain written District approval for the use of any equivalent equipment not specifically approved by this ATC. Approval of the equivalent equipment shall be made in writing and only after the District's determination that the submitted design and performance of the proposed alternative equipment is equivalent to the authorized equipment. [District Rule 2010] Federally Enforceable Through Title V Permit
41. The permittee's request for approval of equivalent equipment shall include the make, model, manufacturer's maximum rating, manufacturer's guaranteed emissions rates, equipment drawing(s) and operational characteristics/parameters. [District Rule 2010] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

42. ATC S-1547-1198-0 shall be canceled upon implementation of this ATC. [District Rule 2201] Federally Enforceable Through Title V Permit



AUTHORITY TO CONSTRUCT

PERMIT NO: S-1547-1199-1

ISSUANCE DATE: 03/29/2013

LEGAL OWNER OR OPERATOR: AERA ENERGY LLC
MAILING ADDRESS: PO BOX 11164
BAKERSFIELD, CA 93389-1164

LOCATION: HEAVY OIL WESTERN STATIONARY SOURCE
KERN COUNTY, CA

EQUIPMENT DESCRIPTION:

MODIFICATION OF 85 MMBTU/HR NATURAL GAS-FIRED STEAM GENERATOR WITH COEN MODEL QLN-ULN ULTRA LOW NOX BURNER, OR NORTH AMERICAN MODEL MAGNA FLAME LEX ULTRA LOW NOX BURNER, OR ADVANCED COMBUSTION TECHNOLOGY GIDEON ULTRA LOW NOX BURNER OR EQUIVALENT, APPROVED TO OPERATE AT VARIOUS SPECIFIED LOCATIONS: REISSUE S-1547-1199-0 WITH AUTHORIZATION FOR INITIAL COMMISSIONING AND REFRACTORY CURING PERIODS

CONDITIONS

1. This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. This unit is approved for operation at the following locations: SE/4 of Section 33 and SE/4 of Section 34 of T28S, R21E; and SW/4 of Section 2 and NE/4, NW/4, SE/4 and SW/4 of Section 3, T29S, R21E. [District Rule 4102]
4. Permittee shall notify the District Compliance Division of each location at which the unit is located in excess of 24 hours. Such notification shall be made no later than 48 hours after starting operation at the location. [District Rule 1070] Federally Enforceable Through Title V Permit
5. This unit shall be equipped with a convection section with at least 235 square feet of heat transfer surface area per MMBtu/hr of maximum rated heat input (verified by manufacturer). [Public Resources Code 21000-21177, CEQA]

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (661) 392-5500 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT. This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Seyed Sadredin, Executive Director / APCO

6. This unit shall be equipped with variable frequency drive high efficiency electrical motors driving the blower and water pump. [Public Resources Code 21000-21177, CEQA]
7. Particulate matter emissions shall not exceed 0.1 grain/dscf at operating conditions, nor 0.1 grain/dscf calculated to 12% CO₂, nor 10 lb/hr. [District Rules 4201, 4301, 5.1 and 5.2.3] Federally Enforceable Through Title V Permit
8. The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap, roof overhang, or any other obstruction. [District Rule 4102]
9. The unit shall only be fired on natural gas with sulfur content not to exceed 0.75 gr-S/100 scf. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
10. Emission rates, except during startup, shutdown, initial commissioning and refractory curing, shall not exceed any of the following limits: NO_x: 7 ppmvd @ 3% O₂ or 0.008 lb-NO_x/MMBtu; PM₁₀: 0.0076 lb-PM₁₀/MMBtu; CO: 25 ppmvd @ 3% O₂ or 0.0185 lb-CO/MMBtu or VOC: 0.003 lb-VOC/MMBtu. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
11. Emission rates during startup, shutdown and refractory curing shall not exceed: particulate matter - 10 pounds per hour, or 0.1 grains/dscf calculated to 12% CO₂; sulfur - 200 pounds of SO₂ per hour, or 2000 ppmv as SO₂, or 0.11 pounds sulfur (as S) per MMBtu on average-wide basis for all units in Rule 4406 plan; NO₂ - 140 pounds per hour or 0.14 pounds per MMBtu. [District Rules 4101, 4102, 4301, 4405, 4406 and 4801] Federally Enforceable Through Title V Permit
12. The initial commissioning period is the time required to complete the necessary safety checks, curing of refractory material and the performance tuning of the burner and attendant systems to achieve compliance with the emission limits required by this permit. The commissioning period begins upon first firing of the unit and shall not extend beyond the first 135 hours of actual burner operation. [District Rule 2201] Federally Enforceable Through Title V Permit
13. The refractory curing period is the time required to gradually increase the firing rate and internal temperature of a unit to thermally temper and set the optimal properties of new refractory material that has been installed as part of a unit's initial commissioning or has been replaced as part of a subsequent maintenance or repair procedure. The refractory curing period following the replacement of material as part of a maintenance or repair procedure shall not exceed 30 hours total of actual burner operation per occurrence. [District Rule 2201] Federally Enforceable Through Title V Permit
14. During the initial commissioning period and any refractory curing period, operator shall limit emissions to the extent possible by optimizing the performance of the low NO_x burner and flue gas recirculation system as can be accommodated by individual initial commissioning and refractory curing activities, by following good work practices and fuel conserving measures and by completing all work in an expeditious manner. Operator shall keep a record of the specific activities undertaken as part of the initial commissioning period and all refractory curing periods and the duration of each activity and shall make the records available for District inspection upon request. [District Rule 2201] Federally Enforceable Through Title V Permit
15. Any of units S-1547-1182 through -1280 may be installed provided that permitted annual emissions do not exceed any of the following limits: NO_x: 49,990 lb/yr; SO_x: 17,210 lb/yr; PM₁₀: 62,282 lb/yr; CO: 151,608 lb/yr or VOC: 24,585 lb/yr, consistent with the quantity of ERCs identified in this project. [District Rules 2201 and 4102] Federally Enforceable Through Title V Permit
16. Annual quantity of natural gas fuel burned in this steam generator shall not exceed 730,000 MMBTU/year. [District Rule 2201] Federally Enforceable Through Title V Permit
17. Duration of start-up and shutdown shall not exceed 2 hours each per occurrence. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
18. Duration of refractory curing shall not exceed 30 hours per each occurrence. Permittee shall keep accurate records of refractory curing duration and make records readily available to the District upon request. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
19. Permittee shall maintain records of duration of each start-up and shutdown, and refractory curing, for a period of five years and make such records readily available for District inspection upon request. [District Rule 4320] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

20. A source test to demonstrate compliance with NOx and CO emission limits shall be performed within 60 days of startup of this unit. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
21. Source testing to measure natural gas-combustion NOx and CO emissions from this unit shall be conducted at least once every twelve (12) months (no more than 30 days before or after the required annual source test date). After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months (no more than 30 days before or after the required 36-month source test date). If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
22. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit
23. For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit the test cannot be used to demonstrate compliance with an applicable limit. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
24. The following test methods shall be used: NOx (ppmv) - EPA Method 7E or ARB Method 100, NOx (lb/MMBtu) - EPA Method 19; CO (ppmv) - EPA Method 10 or ARB Method 100; Stack gas oxygen (O2) - EPA Method 3 or 3A or ARB Method 100; stack gas velocities - EPA Method 2; Stack gas moisture content - EPA Method 4; SOx - EPA Method 6C or 8 or ARB Method 100; fuel gas sulfur as H2S content - EPA Method 11 or 15; and fuel hhv (MMBtu) - ASTM D 1826 or D 1945 in conjunction with ASTM D 3588. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
25. The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
26. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit
27. The permittee shall monitor and record the stack concentration of NOx, CO, and O2 at least once every month (in which a source test is not performed) using a portable analyzer that meets District specifications. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the unit unless monitoring has been performed within the last month. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
28. If the NOx or CO concentrations corrected to 3%, as measured by the portable analyzer, exceed the applicable emission limit, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rules 4102, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
29. All NOx, CO, and O2 emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. The NOx, CO, and O2 analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute sample period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive minute period. [District Rules 4102, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

30. The permittee shall maintain records of: (1) the date and time of NO_x, CO and O₂ measurements, (2) the O₂ concentration in percent by volume and the measured NO_x and CO concentrations corrected to 3% O₂, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
31. All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. Unless otherwise specified in the PTO, no determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0 of District Rule 4320. For the purposes of permittee-performed alternate monitoring, emissions measurements may be performed at any time after the unit reaches conditions representative of normal operation. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
32. **Shorter** time periods for demonstration of compliance after startup or re-ignition may be approved by the APCO by **submittal of appropriate** technical justification upon implementation of this ATC. [District Rule 2201] Federally Enforceable Through Title V Permit
33. PUC quality natural gas is any gaseous fuel where the sulfur content is no more than one-fourth (0.25) grain of hydrogen sulfide per one hundred (100) standard cubic feet, no more than five (5) grains of total sulfur per one hundred (100) standard cubic feet, and at least 80% methane by volume. [District Rule 4320] Federally Enforceable Through Title V Permit
34. If the steam generator is not fired on PUC-regulated natural gas and compliance is achieved through fuel sulfur content limitations, then the sulfur content of the fuel shall be determined by testing sulfur content at a location after all fuel sources are combined prior to incineration, or by performing mass balance calculations based on monitoring the sulfur content and volume of each fuel source. The sulfur content of the fuel shall be determined using the test methods referenced in this permit. [District Rule 4320] Federally Enforceable Through Title V Permit
35. When complying with sulfur emission limits by fuel analysis or by a combination of source testing and fuel analysis, permittee shall demonstrate compliance at least annually. [District Rule 4320] Federally Enforceable Through Title V Permit
36. If the unit is fired on PUC-regulated natural gas, valid purchase contracts, supplier certifications, tariff sheets, or transportation contracts may be used to satisfy the fuel sulfur content analysis, provided they establish the fuel sulfur concentration and higher heating value. [District Rule 4320] Federally Enforceable Through Title V Permit
37. All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
38. Prior to operating under this Authority to Construct, permittee shall surrender emission reduction credits for the following quantities of emissions: NO_x: 1,460 lb/quarter; SO_x: 383 lb/quarter; PM₁₀: 1,387 lb/quarter and VOC: 548 lb/quarter. Offset shall be provided at the applicable offset ratio specified in Table 4-2 of Rule 2201 (as amended 9/21/2006). [District Rule 2201] Federally Enforceable Through Title V Permit
39. ERC Certificate Numbers S-796-2, S-2395-1, S-2958-2, S-1337-5 and S-1032-5 (or certificates split from these certificates) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201] Federally Enforceable Through Title V Permit
40. The permittee shall obtain written District approval for the use of any equivalent equipment not specifically approved by this ATC. Approval of the equivalent equipment shall be made in writing and only after the District's determination that the submitted design and performance of the proposed alternative equipment is equivalent to the authorized equipment. [District Rule 2010] Federally Enforceable Through Title V Permit
41. The permittee's request for approval of equivalent equipment shall include the make, model, manufacturer's maximum rating, manufacturer's guaranteed emissions rates, equipment drawing(s) and operational characteristics/parameters. [District Rule 2010] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

42. ATC S-1547-1199-0 shall be canceled upon implementation of this ATC. [District Rule 2201] Federally Enforceable Through Title V Permit



AUTHORITY TO CONSTRUCT

PERMIT NO: S-1547-1200-1

ISSUANCE DATE: 03/29/2013

LEGAL OWNER OR OPERATOR: AERA ENERGY LLC
MAILING ADDRESS: PO BOX 11164
BAKERSFIELD, CA 93389-1164

LOCATION: HEAVY OIL WESTERN STATIONARY SOURCE
KERN COUNTY, CA

EQUIPMENT DESCRIPTION:

MODIFICATION OF 85 MMBTU/HR NATURAL GAS-FIRED STEAM GENERATOR WITH COEN MODEL QLN-ULN ULTRA LOW NOX BURNER, OR NORTH AMERICAN MODEL MAGNA FLAME LEX ULTRA LOW NOX BURNER, OR ADVANCED COMBUSTION TECHNOLOGY GIDEON ULTRA LOW NOX BURNER OR EQUIVALENT, APPROVED TO OPERATE AT VARIOUS SPECIFIED LOCATIONS: REISSUE S-1547-1200-0 WITH AUTHORIZATION FOR INITIAL COMMISSIONING AND REFRACTORY CURING PERIODS

CONDITIONS

1. This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. This unit is approved for operation at the following locations: SE/4 of Section 33 and SE/4 of Section 34 of T28S, R21E; and SW/4 of Section 2 and NE/4, NW/4, SE/4 and SW/4 of Section 3, T29S, R21E. [District Rule 4102]
4. Permittee shall notify the District Compliance Division of each location at which the unit is located in excess of 24 hours. Such notification shall be made no later than 48 hours after starting operation at the location. [District Rule 1070] Federally Enforceable Through Title V Permit
5. This unit shall be equipped with a convection section with at least 235 square feet of heat transfer surface area per MMBtu/hr of maximum rated heat input (verified by manufacturer). [Public Resources Code 21000-21177, CEQA]

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (661) 392-5500 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT. This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Seyed Sadredin, Executive Director / APCO

6. This unit shall be equipped with variable frequency drive high efficiency electrical motors driving the blower and water pump. [Public Resources Code 21000-21177, CEQA]
7. Particulate matter emissions shall not exceed 0.1 grain/dscf at operating conditions, nor 0.1 grain/dscf calculated to 12% CO₂, nor 10 lb/hr. [District Rules 4201, 4301, 5.1 and 5.2.3] Federally Enforceable Through Title V Permit
8. The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap, roof overhang, or any other obstruction. [District Rule 4102]
9. The unit shall only be fired on natural gas with sulfur content not to exceed 0.75 gr-S/100 scf. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
10. Emission rates, except during startup, shutdown, initial commissioning and refractory curing, shall not exceed any of the following limits: NO_x: 7 ppmvd @ 3% O₂ or 0.008 lb-NO_x/MMBtu; PM₁₀: 0.0076 lb-PM₁₀/MMBtu; CO: 25 ppmvd @ 3% O₂ or 0.0185 lb-CO/MMBtu or VOC: 0.003 lb-VOC/MMBtu. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
11. Emission rates during startup, shutdown and refractory curing shall not exceed: particulate matter - 10 pounds per hour, or 0.1 grains/dscf calculated to 12% CO₂; sulfur - 200 pounds of SO₂ per hour, or 2000 ppmv as SO₂, or 0.11 pounds sulfur (as S) per MMBtu on average-wide basis for all units in Rule 4406 plan; NO₂ - 140 pounds per hour or 0.14 pounds per MMBtu. [District Rules 4101, 4102, 4301, 4405, 4406 and 4801] Federally Enforceable Through Title V Permit
12. The initial commissioning period is the time required to complete the necessary safety checks, curing of refractory material and the performance tuning of the burner and attendant systems to achieve compliance with the emission limits required by this permit. The commissioning period begins upon first firing of the unit and shall not extend beyond the first 135 hours of actual burner operation. [District Rule 2201] Federally Enforceable Through Title V Permit
13. The refractory curing period is the time required to gradually increase the firing rate and internal temperature of a unit to thermally temper and set the optimal properties of new refractory material that has been installed as part of a unit's initial commissioning or has been replaced as part of a subsequent maintenance or repair procedure. The refractory curing period following the replacement of material as part of a maintenance or repair procedure shall not exceed 30 hours total of actual burner operation per occurrence. [District Rule 2201] Federally Enforceable Through Title V Permit
14. During the initial commissioning period and any refractory curing period, operator shall limit emissions to the extent possible by optimizing the performance of the low NO_x burner and flue gas recirculation system as can be accommodated by individual initial commissioning and refractory curing activities, by following good work practices and fuel conserving measures and by completing all work in an expeditious manner. Operator shall keep a record of the specific activities undertaken as part of the initial commissioning period and all refractory curing periods and the duration of each activity and shall make the records available for District inspection upon request. [District Rule 2201] Federally Enforceable Through Title V Permit
15. Any of units S-1547-1182 through -1280 may be installed provided that permitted annual emissions do not exceed any of the following limits: NO_x: 49,990 lb/yr; SO_x: 17,210 lb/yr; PM₁₀: 62,282 lb/yr; CO: 151,608 lb/yr or VOC: 24,585 lb/yr, consistent with the quantity of ERCs identified in this project. [District Rules 2201 and 4102] Federally Enforceable Through Title V Permit
16. Annual quantity of natural gas fuel burned in this steam generator shall not exceed 730,000 MMBTU/year. [District Rule 2201] Federally Enforceable Through Title V Permit
17. Duration of start-up and shutdown shall not exceed 2 hours each per occurrence. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
18. Duration of refractory curing shall not exceed 30 hours per each occurrence. Permittee shall keep accurate records of refractory curing duration and make records readily available to the District upon request. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
19. Permittee shall maintain records of duration of each start-up and shutdown, and refractory curing, for a period of five years and make such records readily available for District inspection upon request. [District Rule 4320] Federally Enforceable Through Title V Permit

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20. A source test to demonstrate compliance with NO_x and CO emission limits shall be performed within 60 days of startup of this unit. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
21. Source testing to measure natural gas-combustion NO_x and CO emissions from this unit shall be conducted at least once every twelve (12) months (no more than 30 days before or after the required annual source test date). After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months (no more than 30 days before or after the required 36-month source test date). If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
22. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit
23. For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit the test cannot be used to demonstrate compliance with an applicable limit. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
24. The following test methods shall be used: NO_x (ppmv) - EPA Method 7E or ARB Method 100, NO_x (lb/MMBtu) - EPA Method 19; CO (ppmv) - EPA Method 10 or ARB Method 100; Stack gas oxygen (O₂) - EPA Method 3 or 3A or ARB Method 100; stack gas velocities - EPA Method 2; Stack gas moisture content - EPA Method 4; SO_x - EPA Method 6C or 8 or ARB Method 100; fuel gas sulfur as H₂S content - EPA Method 11 or 15; and fuel hhv (MMBtu) - ASTM D 1826 or D 1945 in conjunction with ASTM D 3588. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
25. The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
26. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit
27. The permittee shall monitor and record the stack concentration of NO_x, CO, and O₂ at least once every month (in which a source test is not performed) using a portable analyzer that meets District specifications. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the unit unless monitoring has been performed within the last month. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
28. If the NO_x or CO concentrations corrected to 3%, as measured by the portable analyzer, exceed the applicable emission limit, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rules 4102, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
29. All NO_x, CO, and O₂ emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. The NO_x, CO, and O₂ analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute sample period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive minute period. [District Rules 4102, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

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30. The permittee shall maintain records of: (1) the date and time of NO_x, CO and O₂ measurements, (2) the O₂ concentration in percent by volume and the measured NO_x and CO concentrations corrected to 3% O₂, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
31. All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. Unless otherwise specified in the PTO, no determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0 of District Rule 4320. For the purposes of permittee-performed alternate monitoring, emissions measurements may be performed at any time after the unit reaches conditions representative of normal operation. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
32. Shorter time periods for demonstration of compliance after startup or re-ignition may be approved by the APCO by submittal of appropriate technical justification upon implementation of this ATC. [District Rule 2201] Federally Enforceable Through Title V Permit
33. PUC quality natural gas is any gaseous fuel where the sulfur content is no more than one-fourth (0.25) grain of hydrogen sulfide per one hundred (100) standard cubic feet, no more than five (5) grains of total sulfur per one hundred (100) standard cubic feet, and at least 80% methane by volume. [District Rule 4320] Federally Enforceable Through Title V Permit
34. If the steam generator is not fired on PUC-regulated natural gas and compliance is achieved through fuel sulfur content limitations, then the sulfur content of the fuel shall be determined by testing sulfur content at a location after all fuel sources are combined prior to incineration, or by performing mass balance calculations based on monitoring the sulfur content and volume of each fuel source. The sulfur content of the fuel shall be determined using the test methods referenced in this permit. [District Rule 4320] Federally Enforceable Through Title V Permit
35. When complying with sulfur emission limits by fuel analysis or by a combination of source testing and fuel analysis, permittee shall demonstrate compliance at least annually. [District Rule 4320] Federally Enforceable Through Title V Permit
36. If the unit is fired on PUC-regulated natural gas, valid purchase contracts, supplier certifications, tariff sheets, or transportation contracts may be used to satisfy the fuel sulfur content analysis, provided they establish the fuel sulfur concentration and higher heating value. [District Rule 4320] Federally Enforceable Through Title V Permit
37. All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
38. Prior to operating under this Authority to Construct, permittee shall surrender emission reduction credits for the following quantities of emissions: NO_x: 1,460 lb/quarter; SO_x: 383 lb/quarter; PM₁₀: 1,387 lb/quarter and VOC: 548 lb/quarter. Offset shall be provided at the applicable offset ratio specified in Table 4-2 of Rule 2201 (as amended 9/21/2006). [District Rule 2201] Federally Enforceable Through Title V Permit
39. ERC Certificate Numbers S-796-2, S-2395-1, S-2958-2, S-1337-5 and S-1032-5 (or certificates split from these certificates) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201] Federally Enforceable Through Title V Permit
40. The permittee shall obtain written District approval for the use of any equivalent equipment not specifically approved by this ATC. Approval of the equivalent equipment shall be made in writing and only after the District's determination that the submitted design and performance of the proposed alternative equipment is equivalent to the authorized equipment. [District Rule 2010] Federally Enforceable Through Title V Permit
41. The permittee's request for approval of equivalent equipment shall include the make, model, manufacturer's maximum rating, manufacturer's guaranteed emissions rates, equipment drawing(s) and operational characteristics/parameters. [District Rule 2010] Federally Enforceable Through Title V Permit

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42. ATC S-1547-1200-0 shall be canceled upon implementation of this ATC. [District Rule 2201] Federally Enforceable Through Title V Permit